POLITECHNIKA ŚLĄSKA **ZESZYTY NAUKOWE**

SILESIAN UNIVERSITY OF TECHNOLOGY SCIENTIFIC PAPERS

ORGANIZACJA I ZARZĄDZANIE
Zeszyt Naukowy nr 192

ORGANIZATION AND MANAGEMENT
Scientific Paper no. 192

Współczesne trendy w organizacji i zarządzaniu

Modern trends in organization and management

Pod redakcją
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GLIWICE 2024

Wydano za zgodą
Rektora Politechniki Śląskiej

ISSN 1641-3466
ISSN 2720-751X

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Nakł. 30 Ark. wyd. 51,5 Ark. druk. 43,625 Papier offset 70x100, 80 g
Zam. 28/24

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FOREWORD

Presented number of Silesian University of Technology. Scientific Papers. Organization and Management Series. Contemporary management. Presented papers contain result of researches conducted by various universities from Poland. The number consists of 43 papers.

The papers presented in the number concentrate on many topics connected with organization and management. There are in the number papers about: public management, the impact of COVID-19 pandemic on management, sustainable, Industry 4.0, Smart City, healthcare management, information management, tourism management, marketing, environmental management, business ethic, safety management, logistic, Society 5.0 and entrepreneurship.

Bożena Skotnicka-Zasadzień
Radosław Wolniak

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

PUBLIC SECTOR ADAPTATION TO REMOTE WORKING DURING THE SARS-COV-2 PANDEMIC. ANALYSIS AND EVALUATION OF THE DETERMINANTS AND EFFECTIVENESS OF ACTION

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Purpose: The purpose of the study is to analyze and evaluate the remote work of public sector employees during the SARS-CoV-2 pandemic, taking into account the evaluation of the efficiency of the tasks performed, taking into account the type of position held, the experience of the employees, technical and organizational aspects, the inconvenience of the work and the level of digital competence.

Design/methodology/approach: Providing remote work is becoming increasingly common, especially in the context of the Sars-CoV2 pandemic. Both employees and employers recognize the benefits of a flexible work model, as well as several limitations and challenges. The findings of past research on remote work and the study's results indicate the relevance of this research area. This is particularly important concerning the public sector, which is not the subject of as much interest as the private sector. The problem of remote work is a complex and multidimensional phenomenon, hence the need for research using various research methods and techniques. Therefore, our research is based on a mixed approach. They took advantage of the literature analysis and legal regulations on remote work in the public sector and applied a diagnostic survey using a survey questionnaire. In turn, statistical methods such as the chi-square test, p-value, and Pearson's coefficient were used for analysis.

Findings: The results of our study showed that the evaluation of the effectiveness of remote work by public sector employees varies. In addition, of the seven hypotheses posed, three were positively verified: (1) the effectiveness of remote work depends on organizational conditions; (2) the effectiveness of remote work depends on the support of supervisors; (3) The effectiveness of remote work is related to perceptions of changes in the quality of services during the e pandemic. The results also suggest the need to develop management training programs that consider the role of support and communication with employees in the context of remote work.

Research limitations/implications: The study provided valuable information on evaluating remote work in the public sector during the COVID-19 pandemic. However, the study has some limitations. On the one hand, confirmation of three of the seven hypotheses indicates the existence of relationships between the variables studied, but at the same time, highlights the need for further research. The analysis focuses on the public sector, which may not be entirely

representative of other sectors, and the focus on employee perceptions may affect the subjectivity of the results obtained.
Practical implications: The study's results highlight several critical recommendations for organizations in the public sector. First, there is a need to develop training programs that focus on support and communication in the context of remote work to ensure higher efficiency. Second, there is a need to implement a communication strategy to ensure that information flows effectively when working remotely. In addition, organizations should regularly monitor and analyze employee satisfaction and performance to identify areas for improvement. Finally, analyzing the impact of remote work on the quality of services provided is essential to identify and provide the necessary resources or support in relevant areas.
Originality/value: The article addresses the timely and relevant topic of the impact of pandemic on remote work, which represents a research gap. From the literature, the issue has been analyzed in the context of the commercial sector, while limited research exists for the government sector. Our research fills a gap in the literature on remote work in the public sector in the context of the COVID-19 pandemic, providing valuable information on the effectiveness and factors affecting the quality of remote work in this sector.
Keywords: remote working, efficiency, work organization, supervisor support, digital skills, digitization of work, ICT.
Category of the paper: research paper.

1. Introduction

The COVID-19 pandemic has introduced changes in many spheres of life, including the way people do their jobs as noted by (Wang et al., 2023). Because of the restrictions and for employee safety, many companies have been forced to switch to remote work (Kurdy et al., 2023), which has become one of the most essential tools for continuing operations. Remote work, previously an option or an exception, has become one of the most important tools, allowing companies to continue their operations. The revolution in how work is done has taken place quickly and has affected virtually all industries and sectors of the economy.

This dynamic process of labor transformation has not been without its challenges. The transition to remote work required not only the provision of appropriate technological tools (Král et al., 2022) but also to adapt the principles of work organization and team management (Wozniak-Jêchorek, 2022). Companies had to provide employees with the appropriate means to work remotely, such as computers, Internet access and software. However, these were not simplytechnical issues.

It has also become a challenge to manage employees remotely, monitor their performance (Tabor-Blazewicz, Rachoń, 2022; Grant et al., 2013), providing technical support (Král et al., 2022) and maintaining the organizational culture (Deschênes, 2023; Juchnowicz, Kinowska, 2022). This required not only adjustments to the technological infrastructure, but also changes in the legal and organizational rules governing remote work.

The effectiveness of remote work is a topic that has attracted the attention of many researchers (Kurdy et al., 2023; Abdulrahim, Yousif, 2023; Stefanska et al., 2023; Tabor-Blazewicz, Rachoń, 2022; Galanti et al., 2021; Grant et al., 2013; Chandrasekar, 2011; Sardeshmukh et al., 2012; Davis, 2011). The job position occupied has an impact on remote work. As noted by P. Pawlowski, people in managerial positions often face other challenges when working remotely, (Pawlowski, 2020), such as increased responsibilities or the need to coordinate a team.

Organizational conditions, such as a company's structure and procedures, are also crucial. Research by D. Leblebici has shown that companies with well-structured procedures and clearly defined processes have more effective employees (Leblebici, 2012). In turn, researcher T. Galanti showed that autonomy and self-reliance were positively related to employee productivity and engagement when working remotely (Galanti et al., 2021).

In the technology field, research shows that access to modern tools and proper training are crucial to maximizing efficiency (Wang et al., 2023). The transition to providing remote work is not just about the organization's readiness in terms of infrastructure and feasibility, but also requires that employees are ready to accept the transition and that they have the right competencies (Jayawardena et al., 2020; Eberhard et al., 2017). In addition, hardware software used by employees can help organizations improve the quality of work and enhance employee well-being (Segbenya, Okorley, 2022).

Support from superiors is significant (Nakrošienė et al., 2019; Leblebici, 2012). This is pointed out, among others, by M. Kozlowski, who argues that regular feedback and support from team leaders increases the commitment and productivity of remote workers (Kozlowski, 2016). In contrast, (de Vries et al., 2018) demonstrate that positive supervisor-subordinate relationships help minimize the impact of remote work on professional isolation.

Demographic characteristics, such as age and education, also have an impact on remote work performance (Juchnowicz, Kinowska, 2022; Szczepanski, Zamecki, 2021; Salesforce, 2020). Studies have shown that younger workers may be more flexible in adapting to remote work (Komorowska, 2022), while employees with more education often have better digital competencies, resulting in higher productivity.

In conclusion, many studies confirm that the effectiveness of remote work is a multidimensional issue that depends on many individual and organizational factors. However, detailed studies are still limited for a more thorough understanding of this issue (Kian, Yusoff, 2012; Bencsik et al., 2016). Particularly if we consider the public administration sector. Studies on the determinants of remote work mainly focus on the private sector. However, the impact of the pandemic on remote work was not limited to the private sector. Public sector units were also forced to react dynamically and adapt their procedures and policies to the new reality. In most cases, these were institutions that previously had no experience with remote work, which created additional challenges. The findings of previous research on remote work and the study's results indicate the relevance of this research area, especially for the public sector, which is not as much of a focus as the private sector (Hameduddin, 2021).

The above was the source for the formulation of the following research questions, which are the basis for the implementation of the study:

1. How did units adapt existing legal and organizational rules to the requirements of remote working, and were they sufficient?
2. Were the provided ICT tools and supervisor support adequate to provide work from home?
3. Has the shift to remote work resulted in a reduction in service quality?
4. What influenced the effectiveness of remote work in the opinion of respondents?

Therefore, the purpose of the study is to analyze and evaluate the remote work of public sector employees during the SARS-CoV-2 pandemic, taking into account the evaluation of the efficiency of the tasks performed, taking into account the type of position held, the experience of the employees, technical and organizational aspects, the inconvenience of the work and the level of digital competence.

The structure of the article consists of three parts. The first discusses the legal regulation of remote work in the public sector, then focuses on presenting the principles of remote work in public entities, which are complemented by a discussion of remote work in the studied public institution, whereas the last part presents the research methodology along with the obtained research results. During the implementation of the study, research methods and techniques were used, such as: analysis of the literature on the subject, analysis of legal regulations and internal legal acts and rules, diagnostic survey with the use of a survey questionnaire, statistical methods (chi-square test, p-value and Pearson's coefficient). The article concludes with conclusions along with indications of future research directions.

2. Regulating remote work in the public sector

Remote work, also known as telecommuting, is a phenomenon with many dimensions and contexts. There is no single generally accepted definition of the term, but it can be described as a form of work performed in whole or in part at a location other than the default workplace. Terminology related to remote work includes terms such as "remote work", "telework", "work from home" and "home-based work" (International Labour Office, 2020), of which "telework" is a more general term that includes workers using ICT to work remotely. Research on remote work focuses on various aspects of it, such as efficiency, employee health, technologies used for remote work, organizational culture, and the challenges of managing employees in a remote environment.

Evolution of the term teleworking (Barriga Medina et al., 2021) and numerous studies on remote work reflect its significant impact on how employees do their jobs and work lives. As technology and organizations adapt to this work model, it is essential to continue to study and analyze its impact on various aspects of work and social life, especially concerning the public sector.

It should be noted that the popularity and prevalence of remote work is a result of countering the spread of the Sars-CoV-2 epidemic, and not solely a tool for making work more flexible. It is also worth noting that due to the issue's complexity, new regulations governing remote work came into force on April 7, 2023 (Labor Code, 2023), therefore much later than the situation required. As J. Czerw notes from data from the Central Statistical Office, at the end of December 2021, the share of those who worked remotely due to the epidemic situation in the total number of workers surveyed was 6.9%, with the scale of remote work use in the public sector being higher than in the private sector (Czerw, 2023).

Due to the increase in COVID-19 cases and the lack of regulations, there was a need for regulations to limit the spread of the infection. These included restrictions on civil liberties. In Poland, this was both in the nature of freedom of access (regarding cultural facilities, gyms, restrictions on the number of seats on public transportation), prohibition of certain behavior (regarding prohibition of movement of minors during certain hours) and the form of work provision. Concerning the provision of remote work (away from the employer's premises), the legislature found the existing regulation insufficient and introduced the concept of remote work. At the time the law was passed (CoronavirusU, 2020), the potential effects of remote work could only be analyzed concerning telework, present in Polish law since 2007. Accordingly, on November 3, 2020, the Council of Ministers Regulation came into force (Regulation of the Council of Ministers, 2020) allowing remote work for local government employees.

The Council of Ministers has obliged (Regulation of the Council of Ministers, 2020, §24a(1)) heads of public administration offices, general managers or directors of organizational units operating in public administration offices or organizational units performing tasks of a public nature to instruct employees to work remotely. At the same time, §24a(2) stipulated that the exclusion of remote work is possible concerning employees performing tasks necessary to assist citizens or arising from the law or the needs of the office or unit, and it is not possible to perform these tasks by remote work.

The provision formulated in this way simultaneously constituted an obligation (Council of Ministers Ordinance, 2020; §24a(1) – remote work order) and exclusion of the obligation (Council of Ministers Ordinance, 2020; §24a(2)). Similarity to the content of re. 3 of the CoronavirusU, §24a was vague and indefinite in nature, and it was up to the person in charge of the unit and issuing the remote work order to determine altogether: (1) whether the tasks to be performed are necessary and fall within the scope of §24a; (2) whether performance of the tasks is not possible through remote work.

The legislator's intention was to introduce remote work as a rule (as part of countering the SARS-CoV-2 pandemic), and work at the office premises was to be treated as an exception. Also coinciding with this decision was a communiqué of the Joint Commission of Government and Local Self-Government dated October 31, 2020 (Communication of the Joint Commission of Government and Local Government, 2020), preannouncement of the regulation. Although, as rightly emphasized by (Czerw, 2023) remote work should be a solution used not only during the epidemic and not only to counter it, but as a flexible form of employment.

Importantly, the regulations on remote work should also, at a minimum, specify the rules: (1) determination of the location of remote work; (2) direct control by the employer of the performance of remote work; (3) reimbursement to the employee of the costs incurred in connection with the performance of remote work – electricity, Internet, organization of the workstation, others; (4) verification of the organization of the remote workstation in such a way as to ensure safe and healthy working conditions; (5) liability of the employer for accidents to the employee while performing remote work (Czerw, 2023).

3. Characteristics of remote work in the surveyed unit

The case presented here concerns a study conducted at City of Lodz Office (hereafter referred to as UMŁ). The entity, adapting its internal regulations to (Regulation of the Council of Ministers, 2020) and (Law on Prevention and Control of Infections and Infectious Diseases in Humans, 2008), issued an order (Ordinance on Remote Work, UMŁ, 2020) remote work for a limited period (Ordinance of the Council of Ministers, 2021; Ordinance, UMŁ, 2021). It should be noted that the possibility of remote work was not feasible before the pandemic.

Until the introduction of internal rules governing remote work, work orders were given based on generally applicable task responsibility regulations, particularly the Labor Code, the Organizational Regulations and the Work Regulations.

The transition to remote work required a written order from the relevant director or head of the organizational unit. Also, the record of work performed required a written form and required the employee to report electronically the activities performed on a daily basis. An employee working remotely was required to comply with the Data Security Manual and to remain in constant email and telephone contact with his supervisor. The effectiveness of remote work was monitored by the City Secretary.

Despite its unilateral nature, the command was consulted with superiors, the team and colleagues, so that the individual situation in the organizational unit could be considered. In most cases, remote work was used in cases of COVID-19, quarantine or self-isolation and lasted from a few days to a few weeks.

Both those responsible for delegating employees to perform remote work and the employees themselves stressed the need to regulate remote work in the Labor Code urgently. This situation did not change until 2023.

The development of the pandemic in Poland resulted in several successive waves of infections. During the period we analyzed, we can distinguish two consecutive waves. The first lasting from the emergence of COVID-19 disease until the reduction of civil rights restrictions resulting from a sense of control over the spread of the virus, and the second falling in the period from the increase in infections until the start of vaccination. The daily number of SARS-CoV-2 infections in Poland during this period is presented in Figure 1. It is worth noting that the daily nationwide number of diseases during the first wave was relatively small (less than 1000 infections per day), while in the second wave there was a steady increase (nearly 30,000 infections at its peak).

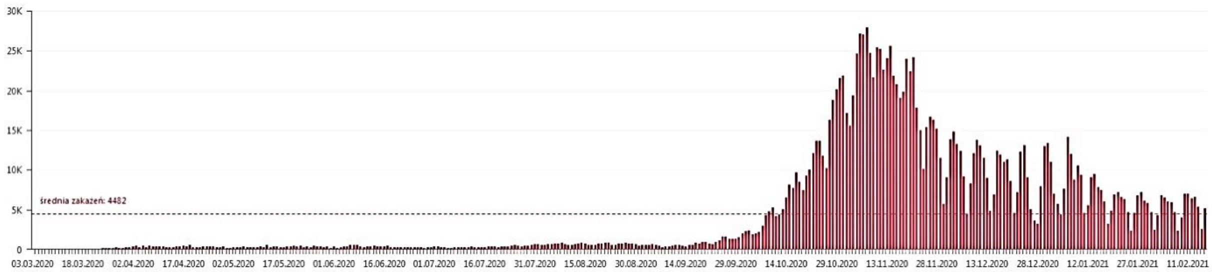

Figure 1. Daily number of SARS-CoV-2 infections in Poland in the period 04.03.2020-15.02.2021.

Source: (Coronavirus in Poland, 2021).

Due to the developing epidemic, the surveyed unit introduced the possibility of remote work and began keeping aggregate records of off-site work orders (Fig. 2, Fig. 3 and Tab.1).

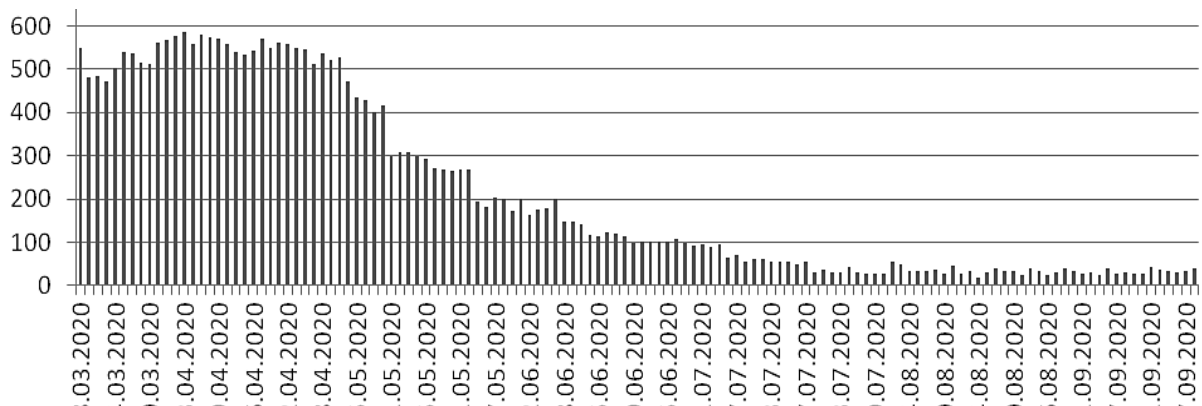

Figure 2. Remote work in UMŁ in the period 18.03.2020 - 18.09.2020.

Source: own study.

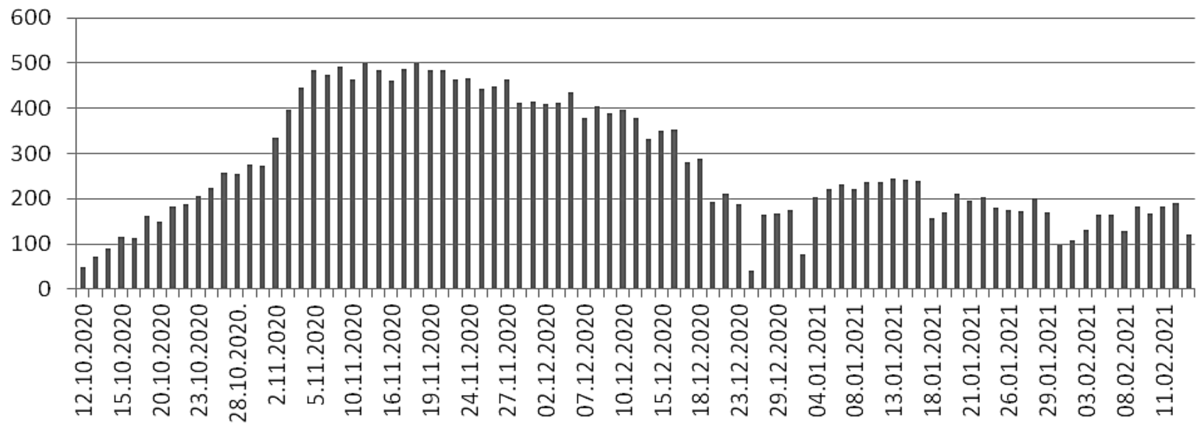

Figure 3 Remote work in UMŁ in the period 12.10.2020 – 15.02.2020.

Source: own elaboration.

During the first wave of the pandemic at UMŁ, we can observe significant differences in the number of employees working remotely between consecutive weeks. On average, during the period from March 18, 2020 until the beginning of May 2020, the number of remote workers exceeded 500 people, but then the number steadily declined to reach only 26 working remotely at the end of August 2020. The second measurement period shows a steady increase in remote workers, which remained between 400 and 500 people in the November-December period, and from Christmas-New Year around 200 people with a downward trend. In total, as of 15/02/2021 148 people were working remotely, however, the days around and before Christmas represent a significant deviation from the norm, usually resulting in absenteeism of about half of the employees.

Table 1.

Remote work in the various Departments of the surveyed entity

Pandemic phase	**18.03.2020-18.09.2020**					**12.10.2020-15.02.2021**			
Date	18.03.20	03.09.20	25.06.20	03.04.20	18.09.20	12.10.20	26.10.20	18.11.20	15.02.21
	Initial day	The lowest number	Closest to the median	The highest number	Final day	Initial day	Closest to the median	The highest number	Final day
Total	**549**	**26**	**103**	**587**	**40**	**48**	**223**	**501**	**122**
D. President	115	18	42	130	25	24	56	74	35
D. Ecology and Climate	17	0	2	39	5	0	7	19	1
D. Health and Social Affairs	37	0	2	28	1	2	33	50	20
D. Planning and Economic Development	reorganization					0	5	45	8
D. Asset Management	66	0	3	65	0	2	6	63	17
D. Revitalization and Sports	26	0	0	22	0	0	0	5	0
D. Labor. Education and Culture	30	0	5	43	1	10	19	81	4
D. Strategy and Development	106	2	19	92	1	9	78	114	29
D. Office Organization and Resident Services	9	0	1	16	0	1	8	35	6

Cont. table 1.

D. Public Finance	66	0	6	81	1	0	11	15	2
D. Service and Administration	77	6	23	71	6	reorganization			

Source: own study.

Analyzing the data from the two research periods (Table 1), it can be seen that during the critical moments of preventing the spread of COVID-19 (March-April and November-December 2020), the level of remote work referrals was similar. Immediately after the introduction of remote work, it reached a maximum of 587 referrals, and during the second wave it oscillated around 500. With the decrease in the incidence of COVID-19 in the summer of 2020 a decline in the number of people working remotely at UMŁ was also observed. Nevertheless, a higher median overall number of remote work referrals is kept in the second wave, possibly due to the increased number of cases and increased awareness of the disease and its spread. The latest measurement confirms this trend, settling at 122.

In conclusion, analysis of the data on remote work orders for individual Departments does not support the thesis of the proportional nature of these orders. It can be seen that the number of referrals varied from Department to Department, with variation due to various factors, such as COVID-19 employee infections or a change in supervisors' views on the legitimacy of using this form of work (in the second of the periods studied). A trend of recommending remote work during the virus outbreak was noted, as well as a reduced number of commands in some Departments in the second wave of the pandemic. In addition, there were no units where remote work was introduced permanently, except for the Legal Department. On the other hand, there were business units where no remote work orders were recorded. Most of these are in the Department of Office Organization and Resident Services. A low number of remote work orders can also be seen in the Department of Public Finance. In the remaining organizational units, remote work orders correlate with employee infections. We can also note incidental preventive remote work orders for most employees of a specific Office or Department due to many diseases.

4. Research Methodology

The empirical research was conducted in 2021, using a survey questionnaire and was anonymous. Employees received an invitation to complete the survey with a link to a Google Docs form. The Office of Human Resources Management of the UMŁ sent an electronic invitation to all employees at their work email address. Respondents were granted complete anonymity to maintain voluntariness and avoid the influence of official subordination on the survey results. The survey return rate was 26% (N = 503) and representative of the unit.

The survey questionnaire consisted of twenty-three closed questions, which included 0-1 (yes, no) responses, on a scale of 1-3 or 1-5. The questions were divided into three groups. The first concerned the nature of the work performed. The second group included questions diagnosing the level of access to equipment and digital competence. The last group of questions was metric. The structure of the respondents is shown in Table 2.

Table 2.
Structure of respondents

	Employed - as of 15.02.2021.					Answers provided					
	Women		Men		SUM	Women		Men		SUM	
Employment status											
Total	1393	71,11%	566	28,89%	**1959**	368	73,16%	135	26,84%	**503**	25,68%
Type of position											
Executive	172	61,87%	106	38,13%	**278**	69	71,13%	28	28,87%	**97**	34,89%
Non-managerial	1221	72,64%	460	27,36%	**1681**	296	73,45%	107	26,55%	**403**	23,97%
Age											
20-30	143	71,50%	57	28,50%	**200**	43	67,19%	21	32,81%	**64**	32,00%
31-40	392	71,27%	158	28,73%	**550**	110	72,37%	42	27,63%	**152**	27,64%
41-50	431	75,88%	137	24,12%	**568**	113	76,35%	35	23,65%	**148**	26,06%
51-60	337	75,90%	107	24,10%	**444**	83	85,57%	14	14,43%	**97**	21,85%
61- and above	90	45,69%	107	54,31%	**197**	19	45,24%	23	54,76%	**42**	21,32%
Seniority											
0-10	337	68,36%	156	31,64%	**493**	90	67,67%	43	32,33%	**133**	26,98%
11-20	450	74,26%	156	25,74%	**606**	128	74,42%	44	25,58%	**172**	28,38%
21-30	323	73,58%	116	26,42%	**439**	87	78,38%	24	21,62%	**111**	25,28%
31 and over	283	67,22%	138	32,78%	**421**	63	72,41%	24	27,59%	**87**	20,67%

Source: own study.

To achieve such a goal, the following research questions were verified in the course of the conducted analyses:

1. How did units adapt existing legal and organizational rules to the requirements of remote working, and were they sufficient?
2. Were the ICT tools and supervisor support made available adequate to provide work from home?
3. Has the shift to remote work resulted in a reduction in service quality?
4. What influenced the effectiveness of remote work in the opinion of respondents?

The analysis was divided into the following stages:

Stage 1 – Preparation of the survey questionnaire.

Step 2 – Create a contingency table.

Step 3 – Conducting a chi-square test.

Based on the tables created, a chi-square test was performed, indicating the differences between the observed and expected frequencies of phenomena in the groups. To accurately interpret the result, a p-value was calculated to assess whether the differences were statistically significant.

Therefore, to analyze and evaluate the work of public sector employees, resulting from the need to switch to remote work during the SARS-CoV-2 pandemic, taking into account the evaluation of the effectiveness of the tasks performed in the perspective of the type of position held, technical and organizational conditions, support of superiors, digital competence of employees, the following research hypotheses were established:

H1: The effectiveness of remote work is dependent on the job position held (managerial, non-managerial).

H2: The effectiveness of remote work depends on organizational considerations.

H3: The effectiveness of remote work depends on technical considerations.

H4: The effectiveness of remote work depends on employees' digital competence.

H5: The effectiveness of remote work depends on the support of supervisors.

H6: The effectiveness of remote work depends on the structure of the respondents (gender, age, education, seniority).

H7. The effectiveness of remote work is related to perceptions of changes in service quality during the pandemic.

The final stage of the analyses was verifying the hypotheses and interpreting the results obtained. All calculations were performed using the Python program.

5. Test results

It was indicated above that a chi-square test was used to verify the research hypotheses. Accordingly, contingency tables were first created and then it was verified whether the rating given by the respondents was influenced by each variable. The analysis results applied to all the established research hypotheses are presented below. The results of the examinations conducted are shown in Table 3.

Table 3.
Results of the chi-square test for each research hypothesis

Research hypotheses	chi-square	p-value	Pearson's contingency coefficient:	Verification H
H1: The effectiveness of remote work is dependent on the job position held (managerial, non-managerial).	8,77	0,07	0,13	Not
H2: The effectiveness of remote work depends on organizational considerations.	46,86	0,00	0,29	Yes
H3: The effectiveness of remote work depends on technical considerations.	3,60	0,46	0,08	Not
H4: The effectiveness of remote work depends on employees' digital competence.	25,09	0,07	0,22	Not
H5: The effectiveness of remote work depends on the support of supervisors.	18,27	0,02	0,19	Yes

Cont. table 3.

H6: The effectiveness of remote work depends on the structure of the respondents: gender, age, education, seniority.	 2,71 26,10 18,26 17,03	 0,61 0,05 0,11 0,15	 0,07 0,22 0,19 0,18	 Not Not Not Not
H7. The effectiveness of remote work is related to perceptions of changes in service quality during the pandemic.	27,11	0,00	0,23	Yes

Source: own study.

First, the associations between the evaluation of remote work effectiveness and the type of job held (managerial, non-managerial) were examined. Table 4 shows the contingency table for hypothesis H1.

Table 4.
Efficiencies of remote work in relation to job type - contingency table

	Workstation		
Efficiency of remote work	**executive**	**non-managerial**	**Final total**
no	28	134	162
large	14	81	95
small	21	47	68
full	5	35	40
average	29	109	138
Final total	**97**	**406**	**503**

Source: own study.

Research indicates that the effectiveness of remote work can depend on many variables, such as the type of tasks performed or the nature of the position held. Specific activities may adapt better to remote working conditions than positions requiring teamwork or direct contact with customers. The survey asked respondents about their assessment of the effectiveness of remote work. According to the results, 46% of respondents considered remote work less effective compared to the traditional work model, while only 8% of respondents expressed the opposite opinion. Interestingly, almost half of the respondents (45%) assessed that they were unable to complete all tasks while working remotely. During the analysis, attention was paid to the responses of respondents who declared that performing tasks remotely was inefficient for them.

Examination of hypothesis H1, which focused on the relationship between task performance and the nature of the job position held (managerial versus non-managerial), did not provide sufficient statistical evidence to support the relationship. The obtained value of the chi-square statistic was 8.77, with an obtained p-value (p-value) of 0.07, with an assumed significance level (α) of 0.05. Therefore, we have no grounds to reject the null hypothesis. In addition, Pearson's contingency coefficient values of 0.13 suggest a very weak relationship between the analyzed variables. The correlation between job performance and organizational (Tab. 5) and technical conditions (Tab. 6) was further investigated.

Table 5.
Efficiencies of remote work in relation to organizational considerations – contingency table

	Organizational conditions					
Efficiency of remote work	**very good**	**good**	**average**	**bad**	**very bad**	**Final total**
full	12	12	9	4	3	40
large	11	47	29	3	4	94
average	15	67	42	12	0	136
small	7	18	30	10	3	68
no	9	64	64	15	10	162
Final total	**54**	**208**	**174**	**44**	**20**	**500**

Source: own study.

The survey found that only half of the respondents (52.4%) gave a positive assessment of the employer's organization of remote work, while as many as 48.8% showed an ambiguous positive and negative assessment. The negative assessment became the reason for H2 verification, which aimed to test whether the effectiveness of remote work is dependent on organizational conditions. The $\chi 2$ (46.86) independence test allows us to reject the null hypothesis of independence of the studied characteristics. This means there is a statistically significant relationship between the effectiveness of remote work and organizational conditions. In addition, Pearson's contingency coefficient suggests a moderate relationship between the variables.

Organizational determinants were related to the structural aspect, hierarchy, division of authority, communication, formal rules, division of responsibilities, and guidelines for the operation of the studied unit. In light of the results, it can be concluded that the right organizational conditions significantly impact remote work efficiency, which can be necessary during the implementation or optimization of remote work. It is also worth pointing out that respondents in the surveyed unit, positively assessed the provision of appropriate tools for communication and cooperation, building a positive atmosphere in the team and maintaining bonds between employees during remote work.

Another important factor affecting the efficiency of remote work is technical considerations, as they relate to the infrastructure and tools required to perform tasks online. Requirements include software, reliable computer hardware with equipment, or fast and stable Internet access. In the case of our study, only 20% of respondents indicated that the employer, when issuing a remote work order, provided the necessary technical equipment (computer, software, camera) for the work. The rest of the respondents used their private computer equipment to carry out business work and rated its usefulness as very good and good (85%). In the course of the survey, an effort was made to verify whether technical conditions affect the effectiveness of remote work.

Table 6.
Efficiencies of remote working vs. technical considerations – contingency table

	Technical considerations		
Efficiency of remote work	**Not**	**Yes**	**Final total**
full	28	11	39
large	79	16	95
average	106	30	136
small	56	10	66
no	128	34	162
Final total	**397**	**101**	**498**

Source: own study.

In this case, the χ2 independence test does not allow rejecting the null hypothesis of independence of the studied characteristics. This means there is no statistically significant relationship between technical conditions and the effectiveness of remote work. In addition, Pearson's contingency coefficient indicates a very weak relationship between the variables. The need for digital tools was imposed during the COVID-19 pandemic and the transition from the traditional form of work to a remote model. Employees were confronted with the need to adapt to the new conditions, which included using various applications, communication and messaging platforms, or cloud storage systems.

It is worth emphasizing that employees' digital competencies, which include the ability to use computer equipment, multimedia tools and the internet, among other things, may show variation depending on factors such as age, education and work experience. Consequently, the impact of the pandemic on the level of these competencies may vary for different demographic groups of employees. Analysis of the responses of respondents from the surveyed unit indicated that the vast majority rated their digital competencies as high or very high (74%). Only a marginal portion of respondents (3%) indicated that adaptation to remote work had contributed to their digital competence. Moreover, more than half of the respondents expressed the belief that gaining these competencies would not have a significant impact on their future career path. It is worrisome that despite the positive self-identification of their digital skills, respondents do not see a direct link between them and their potential career development.

From the point of view of the demographic structure, there was a noticeable disparity in digital competence ratings between men and women; with women rating their digital skills at a higher level (40% of the total surveyed, and 57% among women). The survey also showed that employees with higher education, aged 31-50 and with 11-20 years of work experience marked a higher level of digital competence.

Table 7.
Effectiveness of remote working in relation to the level of digital competence of employees – contingency table

Efficiency of remote work	Level of digital competence					
	very low	very high	low	average	high	Final total
no	0	29	4	50	79	162
large	1	29	1	21	43	95
small	0	13	1	17	37	68
full	0	14	0	5	21	40
average	0	29	3	23	83	138
Final total	**1**	**114**	**9**	**116**	**263**	**503**

Source: own study.

H4 suggesting that the effectiveness of remote work is dependent on employees' digital competence was examined (Tab. 7). The chi-square statistical test showed a value of 25.09, with a p-value of 0.07, suggesting insufficient statistical evidence to support this hypothesis. In addition, Pearson's contingency coefficient of 0.22 indicates a weak relationship between digital competence and remote work efficiency. As a result, there was insufficient evidence to support the relationship between remote work effectiveness and employees' digital competence.

Another vital issue affecting employee performance is the support of supervisors, especially in the context of adaptation to remote work caused by the COVID-19 pandemic. The ability of management to provide the necessary support, communication and commitment is critical to maintaining the level of performance and commitment of remote workers. In analyzing the survey results, it was noted that more than 75% of respondents rated the engagement and support of their supervisors at the same level as during traditional desktop work. This observation underscores the importance of maintaining high levels of interaction and support from management, even in altered working conditions.

Table 8.
Effectiveness of remote work versus supervisor support – contingency table

	Support from superiors			
Efficiency of remote work	**lower**	**unchanged**	**higher**	**Final total**
no	33	122	7	162
small	13	47	7	67
average	14	111	11	136
large	13	73	9	95
full	10	22	7	39
Final total	**83**	**375**	**41**	**499**

Source: own study.

In verifying hypothesis H5, the $\chi2$ (18,27) independence test allows us to reject the null hypothesis of independence of the studied characteristics. This means a statistically significant relationship exists between the effectiveness of remote work and support from superiors. In addition, Pearson's contingency coefficient of 0.19, although indicating a weak correlation, confirms the presence of a relationship between management support and remote work effectiveness.

These findings highlight the importance of management support in the context of remote work, which should be considered by organizations planning or pursuing this work model. Effective support from supervisors can contribute to maintaining or even increasing the effectiveness of remote work, which can consequently contribute to achieving organizational goals, even under challenging circumstances. In light of the above data, organizations may consider developing management training programs that focus on communication and support for employees in the context of remote work, as well as monitoring and continuously surveying employee satisfaction and performance levels to identify areas for improvement. The study also sought to assess the impact of the structure of the respondents surveyed (gender, age, education, seniority of service) on the effectiveness of tasked work, allowing for a deeper understanding of the phenomenon (Table 9-12). The results indicate that women were generally better at performing remote duties than men. In terms of age groups, middle-aged workers (41-50 years old) experienced slightly more difficulty in performing all tasks while working remotely. The percentage of those who were unable to perform all tasks tended to increase with age, with the exception of the over 61 age group, where the percentage was relatively low, especially among men. As for the level of education, those with secondary education seem to have more problems compared to those with higher education. On the other hand, employees with less seniority (up to 10 years) indicated that remote work was more burdensome.

Table 9.
Effectiveness of remote work in relation to gender of respondents – contingency table

	Gender		
Efficiency of remote work	**woman**	**man**	**Final total**
no	116	46	162
small	47	21	68
average	102	35	137
large	75	20	95
full	28	12	40
Final total	**368**	**134**	**502**

Source: own study.

Table 10.
Effectiveness of remote work in relation to age of respondents – contingency table

	Age					
Efficiency of remote work	**20-30 years old**	**31-40 years old**	**41-50 years old**	**51-60 years old**	**over 61 years old**	**Final total**
no	13	38	60	35	16	162
small	8	24	14	17	5	68
average	20	44	41	23	10	138
large	14	28	28	17	8	95
full	10	17	5	5	3	40
Final total	**65**	**151**	**148**	**97**	**42**	**503**

Source: own study.

Table 11.
Effectiveness of remote work in relation to respondents' education – contingency table

	Education				
Efficiency of remote work	**middle school**	**medium**	**higher**	**professional**	**Final total**
no		17	142		159
large	1	10	78	1	90
small		5	61		66
full		4	34	1	39
average		25	109		134
Final total	**1**	**61**	**424**	**2**	**488**

Source: own study.

Table 12.
Effectiveness of remote work in relation to the seniority of respondents – contingency table

	Seniority				
Efficiency of remote work	**0-10 years old**	**11-20 years old**	**21-30 years old**	**over 31 years old**	**Final total**
no	32	57	39	34	162
large	30	26	22	17	95
small	19	21	16	12	68
full	18	11	6	5	40
average	35	56	28	19	138
Final total	**134**	**171**	**111**	**87**	**503**

Source: own study.

The results of the statistical analysis presented in the context of research hypothesis H6 indicate that there is no significant relationship between remote work effectiveness and the structural variables analyzed, such as gender, age, education and seniority. According to Table 3 of the study results, the chi-square values indicate that there is no strong relationship, while the p-value values suggest that the observed differences are not statistically significant. Pearson's contingency coefficients, a measure of the relationship between variables, also suggest weak relationships. Thus, H6 did not find significant support in the data, suggesting that the demographic structure of respondents does not show a strong relationship with their remote work effectiveness. Also, research by J. Szczepanski and L. Zamęcki shows that age is not a significant variable and had no impact on the way work was done (Szczepanski, Zamęcki, 2021).

The last hypothesis that was verified was the relationship between opinions on the effectiveness of remote work and perceptions of changes in service quality during the pandemic (Tab. 13). In the survey conducted, almost 77% of respondents indicated that the pandemic did not affect the quality of services, while 17% of respondents believe, it was at a lower level. However, it was decided to examine the relationship between the variables.

Table 13.
Effectiveness of remote working in relation to perceived changes in service quality during a pandemic – contingency table

	Quality of services provided			
Efficiency of remote work	**At a lower level**	**At a higher level**	**No impact**	**Final total**
no	43	7	112	162
large	9	8	78	95
small	14	2	52	68
full	6	6	28	40
average	14	7	115	136
Final total	**86**	**30**	**385**	**501**

Source: own study.

Research hypothesis H7 suggests a relationship between remote work effectiveness and perceptions of changes in service quality during the pandemic. Statistical analysis indicates a chi-square value of 27.11 suggesting a connection between the variables. The p-value of 0.00 is very strong evidence of this, the ascendancy of the relationship between the variables, and indicates a very high level of significance. On the other hand, Pearson's contingency coefficient of 0.23 suggests a moderate relationship between the effectiveness of remote work and perceptions of changes in service quality. Although the relationship is not very strong, it is significant and may indicate critical practical implications.

In summary, the results suggest that employees who were effective at working remotely were also able to perceive changes in the quality of services provided by their organizations during a pandemic. This may suggest that adaptation to remote work and maintaining high service quality are linked. This is vital for organizations seeking to maintain customer satisfaction and operational efficiency during difficult periods such as a pandemic.

The ability to adapt to the requirements of remote work is also an essential factor in the transition and provision of remote work. In the case under review, the unit responded correctly to the changing circumstances, adjusting its legal and organizational rules in response to nationwide regulations on remote work. Of particular note is the speed and flexibility with which the institution made decisions and issued orders in response to state guidelines.

The introduction of mechanisms to control the remote work process was a crucial step in maintaining the quality and efficiency of employees' task performance. The obligation of daily reporting and constant contact with the supervisor ensured that, although employees performed their duties remotely, they were still accountable and obligated to comply with established standards.

The introduction of data security regulations was an important element in the whole process of adjusting to the new form of work. Caring about personal data indicates the institution's responsibility and commitment to ensuring compliance with data protection regulations.

At the same time, UMŁ's flexibility in applying remote work regulations is worth highlighting. Although the remote work orders were unilateral, the fact that they were consulted with the team shows that the institution sought to consider the individual needs and situations of employees.

6. Summary

The study was conducted to assess the remote work of public sector employees in the context of the COVID-19 pandemic and helped fill a research gap due to limited research in this sector.

We adopted seven hypotheses for the study. Only three of them were positively verified: (1) remote work efficiency depends on organizational conditions; (2) remote work efficiency depends on supervisor support; (3) remote work efficiency is related to perceptions of changes in service quality during the pandemic.

Our research also indicates that institutions should consider developing management training programs that focus on communication and employee support in the context of remote work to maintain or increase the effectiveness of remote work. It is necessary to develop a communication strategy that enables effective information flow between teams and supervisors when working remotely. Implement an employee satisfaction and effectiveness survey, through continuous monitoring and research to identify areas for improvement and understand the impact of remote work on the organization and employees. It is also not insignificant to analyze the impact of remote work on the quality of services provided, for identifying areas that may require additional support or resources to maintain quality services. While minimizing technical barriers is possible by making investments in technology infrastructure.

It is also worth noting that despite the lack of previous experience arising from remote work in the public administration, the transition to this type of work has not caused significant formal problems, and its evaluation is positive. The surveyed unit demonstrated its ability to adapt to the dynamically changing situation related to the COVID-19 pandemic, and the introduction of regulations on remote work was a response to the new challenges that emerged in 2020. Also, research (Szczepanski, Zamecki, 2021) emphasize the importance of making remote work regulations more flexible.

In addition, the effectiveness in adapting to the challenges of remote work was due to, among other things, reactivity and speed of decisions, maintaining control over the work process, flexibility in adjusting regulations, or attention to data security. Since, as highlighted by researchers J. Szczepanski and L. Zamêcki, with the delegation of public employees to remote work significantly reduces the security of transmitted information (Szczepanski, Zamęcki, 2021).

In addition, we can also see a permanent change in internal practices in the unit, e.g., some meetings have permanently taken the form of videoconferencing (e.g., mayor's colleges, multi-person internal or external meetings).

It should be noted that our study was quantitative, which limits the analysis of certain aspects. While quantitative data provides essential information on trends and correlations, qualitative research could provide more detailed information on employees' experiences, feelings and perspectives. Such information could be key to understanding why some employees may experience challenges in remote work, while others adapt to it without difficulty.

In addition, although our research sample is large, it was limited to one public institution, which may affect the generalization of the results. Public entities may have different organizational culture, structure and procedures that affect the experience of working remotely. It is also worth noting that the survey was conducted during a specific period. External factors, such as the pandemic situation, can shape how employees feel about working remotely. Therefore, it is important to conduct similar studies at different periods to understand how these factors affect the results.

Therefore, while our survey provides essential insights into remote work in the public sector, it is vital to understand its limitations and interpret the results with these limitations in mind.

Acknowledgements

Publication financed by the Krakow University of Economics within the framework of the Conference Activity Support Program - WAK-2023.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

DEVELOPMENTS IN THE AGRICULTURAL REAL ESTATE MARKET IN THE CONTEXT OF THE ACQUISITION OF REAL ESTATE BY FOREIGNERS

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Purpose: The aim of the study was to analyse the legal provisions regulating the acquisition of real estate by foreigners and to indicate the area of agricultural real estate acquired by foreigners in the years 2010-2021. The analysis attempts to describe the problems resulting from the lack of coherence between the Act on shaping the agricultural system and the Act on the acquisition of real estate by foreigners.
Design/methodology/approach: The research methodology is based on an analysis of the existing legal and organisational regulations concerning the possibility of acquiring rights to real estate in the territory of the Republic of Poland. The authors have also reviewed the available literature in which authors have addressed issues related to the acquisition of real estate by foreigners. The annual reports made available by the Ministry of Interior and Administration on the implementation of the aforementioned Act were also used.
Findings: Polish legislation favours the establishment and enlargement of family farms. At the same time, the law does not prohibit the running or enlargement of farms other than family farms, as persons running such farms may conclude agricultural land lease agreements or purchase land with the consent of the National Agricultural Support Centre. Importantly, foreigners from EU countries who decide to run an agricultural holding in Poland and obtain the status of an individual farmer have the same rights as Polish farmers with regard to not only the acquisition of agricultural land, but also direct payments, insurance in the Agricultural Social Insurance Fund (Kasa Rolniczego Ubezpieczenia Społecznego) or other rights and obligations related to agricultural activity in Poland.
Originality/value: The publication addresses important issues concerning the acquisition of real estate in Poland by persons from both EU and non-EU countries. The subject matter is important in the context of the current socio-economic and political situation.
Keywords: agricultural real estate, acquisition of real estate by foreigners, real estate market.
Category of the paper: market research.

1. Introduction

The land market is characterised by great sensitivity due to changes in the economic, legal, financial as well as demographic environment. For reasons of both attachment and long-standing struggles over land, the nation's desire to preserve its identity and secure its interests has led to many legal regulations (Swinnen, Vranken, 2010). Each state controls socio-economic relations by introducing a number of different restrictions, making the performance of a particular legal act subject to a number of requirements (Suchoń, 2017). In most cases, this was and is dictated by rational reasons, while sometimes it is for reasons understood only by the legislator.

The legal norm contained in Article 1 of Protocol No. 1 to the Convention for the Protection of Human Rights and Fundamental Freedoms (Protocol No. 1 to the Convention for the Protection of Human Rights ...) states that "every natural and legal person has the right to respect for his or her property. No one shall be deprived of his property except in the public interest and under the conditions provided for by law and in accordance with the general principles of international law" (Protocol No. 1 to the Convention for the Protection of Human Rights ..., art. 1). The above provisions of the Convention should in no way limit the right of States to enact such laws as they deem necessary to regulate the use of property in accordance with the general interest. A. Lichorowicz pointed out that in the adopted Treaty of Rome it was stipulated that all matters touching the legal regime of property, especially ownership, are the exclusive sphere of the internal law of the member states (Lichorowicz, 1998). Therefore, the impact of the European Union on agricultural property in member countries is always through the internal legislation of these countries.

The literature on the subject indicates that the trade in agricultural real estate in Poland has always been subject to restrictions. Initially, agricultural real estate could only be owned by a certain privileged group of society, and over time the regulations were liberalised, nevertheless, some restrictions still exist today (Blaszke, 2018).

The main objective of the article is to present the basic issues related to the restrictions on the circulation of agricultural real estate to which foreigners are a party, with particular emphasis on the changes in legal norms introduced after 2016.

An analysis of the source literature has been carried out to discuss the issues addressed. In order to illustrate the size changes, empirical data on the area of agricultural real estate acquired in the West Pomeranian Voivodeship by natural and legal persons were used, with particular emphasis on protected areas, as these areas are a characteristic element of the landscape of the West Pomeranian Voivodeship. The source data were obtained from the Ministry of Interior and Administration and relate to the period 2010-2021.

2. Restrictions arising from the acquisition of real estate by foreigners

The agricultural land market is a complex phenomenon, strongly linked to the national economy. Its efficient functioning makes it possible to rationally manage the inherently limited spatial resources from the area of municipalities to the area of the country. An efficient agricultural land market is of great importance for economic development, especially in rural areas (Blajer, 2022). Land is an important factor in the production of agricultural commodities. Well-functioning land markets (and especially market transactions: both sales and leases) enable the transfer of land to more efficient producers (Źróbek-Różańska, Zielińska-Szczepkowska, 2019; Bórawski et al., 2019). Furthermore, land can be a source of political power. It is a good investment of capital and is used as a hedge against inflation, making it attractive to investors who lack the skills and/or interest in agricultural production (Skotarczak, Blaszke, 2019). This creates an urgent need for continuous market research to identify the mechanisms of the market. In addition, the functioning of the agricultural land market is important for the conduct of European Union policy. The Common Agricultural Policy is a Community-wide policy providing various types of support for the agricultural sector and rural development (Bórawski, 2020). It has undergone quite a thorough evolution since its establishment in 1962, but some of the main objectives remain the same: to support farmers and improve agricultural productivity, to ensure a stable supply of affordable food and to protect EU farmers so that they can earn an income from their activities (European Commission, 2021). To what extent these objectives can be achieved depends on the specific characteristics and regulations of each country. Each Member State had and has its own regulations that legally restrict foreigners from acquiring property (Blaszke, 2018). Given the importance of land and the functioning of land markets, it is not surprising that government interventions affecting the land market are widespread (Dudek, Wrzaszcz, 2020). There has been widespread introduction of land trading regulations that can restrict both supply and demand for land and affect both sale and lease transactions.

The fundamental Polish legal act that deals with the regulation of the acquisition of the right of ownership or perpetual usufruct of real estate by foreigners is the Act of 24 March 1920 on the Acquisition of Real Estate by Foreigners (Act of 24 March 1920 on the Acquisition of Real Estate ...). The Act introduces the general principle that the acquisition of real estate by a citizen of a foreign state requires a permit from the Minister of Internal Affairs and Administration (Wereśniak-Masri). It also regulates the acquisition by such persons of shares or stocks in commercial law companies with their registered office in the territory of the Republic of Poland that are owners or perpetual usufructuaries of real estate. A foreigner within the meaning of the provisions of the said Act is (Urban, Urban, 2019):

- a natural person who does not have Polish citizenship,
- a legal person with a seat abroad,
- an unincorporated company of natural persons who do not have Polish citizenship or legal persons with their seat abroad, established in accordance with the legislation of foreign countries, and
- a legal person and a commercial company without legal personality established on the territory of the Republic of Poland, controlled directly or indirectly by natural persons who do not have Polish citizenship, legal persons with their seat abroad, or an unincorporated company of natural persons who do not have Polish citizenship or legal persons with their seat abroad, established in accordance with the legislation of foreign countries.

In its current form, the Act has been in force since 1 May 2004, the date of Poland's accession to the European Union. The provisions of the Act are aligned with the requirements of European law, and in particular with European freedoms, such as the freedom of movement of capital or the freedom of movement of persons (Stacherzak, 2019), enjoyed by entities from states-parties to the Agreement on the European Economic Area and the Swiss Confederation (Report of the Minister of the Interior and Administration on implementation in 2015; Bórawski, 2019). The result of the adaptation of Polish legislation to European requirements is the possibility for foreigners from the European Economic Area and the Swiss Confederation to acquire real estate and shares in commercial law companies without a permit. The only exception to this rule concerned agricultural and forestry real estate, for the acquisition of which foreigners from the European Economic Area and the Swiss Confederation were required to obtain a permit for a period of twelve years from the date of Poland's accession to the European Union, i.e. until 1 May 2016. In the case of foreigners from outside the European Economic Area and the Swiss Confederation, there is, in principle, an obligation to obtain a permit for the acquisition of any real estate (Brożyna, Pijanowska, 2019). Since 1 May 2016, only foreigners from outside the European Economic Area and the Swiss Confederation have been formally obliged to do so (Łobos-Kotowska, 2022). The Polish legislator, in response to the end of the transitional period in restricting the acquisition of agricultural real estate, decided to amend the Act of 11 April 2003 on the shaping of the agricultural system, which resulted in far-reaching restrictions on the circulation of these properties (Bórawski et al., 2019; Klimach et al., 2020). The introduction of these changes was met with criticism from doctrine and practice, so by the Act of 26 April 2019 amending the Act on shaping the agricultural system, the rigour of the previous solutions was slightly mitigated. As a rule, agricultural real estate in Poland may be acquired by individual farmers. A number of exceptions to this rule are provided for, resulting directly from the provisions of the Act (Klimach, 2020). The definition of an individual farmer is regulated in detail in the Act on Formation of the Agricultural System. It has also been allowed that agricultural real estate may be purchased by other persons (than an individual farmer and entities listed in the Act) after obtaining the consent of the Director General of the National Centre of Agricultural Support.

In addition, a principle has been introduced that the purchaser of agricultural real estate is obliged to run an agricultural holding, of which the acquired agricultural real estate is a part, for a period of at least 5 years from the date of its acquisition by the purchaser, and in the case of a natural person - to run the holding personally. At the same time, during this period, he may not dispose of the acquired real estate or give possession of it to other entities, although a number of exceptions are also provided for in this case.

The qualification of real estate as agricultural takes place on the basis of the local zoning plan, and in the absence of a current plan, the information contained in the land register is taken into account (Judgment of the WSA in Warsaw of 10.05.2006). With regard to citizens or entrepreneurs of the United Kingdom of Great Britain and Northern Ireland, in accordance with the agreement of 12 November 2019 on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, there was a transitional period during which these entities were treated as before, i.e. citizens of a Member State of the European Union. The transitional period began upon the entry into force of the aforementioned agreement and ended on 31 December 2020 due to the failure to decide on its extension.

The administrative proceedings on the permit for the acquisition of agricultural real estate shall be initiated at the request of a foreigner. The minister in charge of internal affairs issues a permit for the acquisition of agricultural real estate, unless the Minister of National Defence and the minister in charge of rural development raise objections. The 14-day period for these authorities to express their objections then begins to run. If none of the ministers expresses an objection within this period, the minister responsible for internal affairs issues a decision authorising the acquisition of real estate by a foreigner. The position of these ministers is constitutive, which means that the lack of consent from one of them prevents the issuance of a positive decision. The effectiveness of an issued permit thus depends on the consensual expression of will by the authorities mentioned in the provision, with the consent of the Minister of Defence and the minister competent for rural development taking the form of a decision. The minister responsible for rural development may, before taking a decision, request information from other authorities necessary for the decision to be issued and ask them to take a position (Kawecka-Pysz, 2004). Moreover, the minister competent for rural development, when assessing the application for granting a permit for the acquisition of agricultural real estate by a foreigner, is entitled to take into account the social interest by referring to the provisions of the Act of 11 April 2003 on shaping the agricultural system, according to which the preferred acquirer of agricultural real estate is a farmer running a family holding, having agricultural qualifications and residing in the municipality where at least a part of the acquired agricultural real estate is located (Judgment of the WSA in Warsaw of 15.04.2009).

Permission to acquire agricultural real estate shall be granted to a foreigner if:

- it will not cause a threat to defence, state security or public order, and it is not opposed by considerations of social policy and public health (Act of 24 March 1920 on the Acquisition of Real Estate ..., art. 1a.1.1),
- he demonstrates that there are circumstances confirming his ties to the Republic of Poland (Act on the Acquisition of Real Estate ..., art. 1a.1.2).

Circumstances confirming a foreigner's ties with the Republic of Poland may be, in particular (Act on the Acquisition of Real Estate by Foreigners, art. 1a.2):

- having Polish nationality or Polish origin,
- entering into marriage with a citizen of the Republic of Poland,
- possession of a temporary residence permit (excluding residence permits for foreigners who are victims of trafficking in human beings and due to circumstances requiring a short-term stay), permanent residence or a residence permit for a long-term EU resident,
- membership in the governing body of an entrepreneur who is a legal person or a commercial company without legal personality with its seat on the territory of Poland, controlled by foreigners,
- performance of economic or agricultural activity in the territory of the Republic of Poland in accordance with the provisions of Polish law.

The area of the agricultural real estate acquired should be justified by actual needs resulting from the nature of the activity performed, and moreover, the provisions of the Act on shaping the agricultural system must be observed during the acquisition.

Table 1 presents the total area of agricultural real estate acquired by foreigners in the Zachodniopomorskie Voivodeship in 2010-2021, broken down by natural and legal persons.

Table 1.
Area of agricultural real estate acquired by foreigners between 2010 and 2021 in the Western Pomeranian Voivodship (in hectares)

Specification	Years											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
natural persons	2,09	95,67	13,88	105,11	6,38	2,21	1,23	1,06	0,98	0,96	0,83	1,36
legal persons	13,6	32,66	12,7	39,01	73,84	33,35	0	0	0	0	0	0
total	15,69	128,33	26,58	144,12	80,22	35,56	1,23	1,06	0,98	0,96	0,83	1,36

Source: own compilation based on data from the Ministry of Interior and Administration.

A total of 436.92 ha of land was sold between 2010 and 2021. In the case of individuals, a wide variation in the area of land acquired can be observed. The largest area of agricultural real estate was purchased in 2011 (95.67 ha) and 2013. (105.11 ha) and the smallest in 2020 (0.83 ha). In the case of legal entities, foreigners bought more than 10 hectares of agricultural land per year in every year surveyed until 2016, and in 2014 alone the area of acquisition was 73.84 hectares. The data shows that sales mainly took place between 2010 and 2015. During this period, 94 permits were issued to foreigners for the acquisition of agricultural real estate in the West Pomeranian Voivodeship with a total area of 430.5 ha, of which natural persons purchased 225.34 ha and legal persons 205.16 ha.

Increasingly, there is a noticeable intensification of activities undertaken in order to preserve the natural character of the environment as much as possible, guaranteeing the continuity of the most important processes in the biosphere and maintaining the environment in a state that ensures optimal conditions for human existence. There is a growing interest in the idea of protecting the natural environment. In the West Pomeranian Voivodeship, as in the whole of Poland, protected areas function not only in a specific natural reality, but also in a certain social reality. The quality of agricultural land and its area are the main factors influencing agricultural activity (Przygodzka, 2006). Areas covered by various forms of nature are a characteristic element of the landscape of the West Pomeranian Voivodeship. The total area of all forms of nature protection established in the Zachodniopomorskie Voivodeship is 493,969 ha, which is about 21.58% of the area of the voivodeship. Table 2 presents the total area of agricultural real estate in protected areas acquired by foreigners in the Zachodniopomorskie Voivodeship in the years 2010-2021, broken down by natural and legal persons.

Table 2.
Surface area of agricultural real estate located in protected areas acquired by foreigners between 2010 and 2021 in the Zachodniopomorskie Province (in hectares)

Specyfication	Years											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
natural persons	1,23	13,21	2,25	19,62	0,48	0,91	0,05	0,04	0,03	0	0	0
legal persons	3,87	10,41	1,78	13,14	3,18	1,78	0	0	0	0	0	0
total	5,1	23,62	4,03	32,76	3,66	2,69	0,05	0,04	0,03	0	0	0

Source: own compilation based on data from the Ministry of Interior and Administration.

The data presented shows that the share of agricultural real estate located in protected areas in the total area of agricultural real estate purchased by foreigners between 2010 and 2021 was 71.98 ha or 16.47%. The largest area of agricultural real estate located in a protected area was purchased by individuals in 2013. (19.62 ha) and the smallest in 2018 (0.03 ha). In the case of legal entities, foreigners purchased only until 2016, and the size of the area of land acquired did not exceed 13.14 h in any year. After 2015, properties with a small area were traded and the total area sold was less than 0.05 ha. Foreign natural persons acquired about 52.46% of the total agricultural properties located in protected areas and legal persons 47.54%. As of 2016, only natural persons were purchasers of agricultural land and the total area of properties acquired was 0.12 ha. Analysing the purchasers by country of origin, it should be noted that the highest number of permits for the acquisition of agricultural real estate was received by natural and legal persons coming from: Germany (40 permits), Denmark (10 permits), the Netherlands (8 permits), Sweden (5 permits), Spain (4 permits). In the analysed period, the highest number of transactions involving agricultural real estate and foreigners as buyers was in 2010-2013, which accounted for 79.79% of all transactions. In the following years, sales decreased, which could have been caused by the expectation situation related to the end in 2016 of the period with restrictions on the acquisition of agricultural real estate by citizens of the Member States of the European Economic Area and the Swiss Confederation.

3. Summary and conclusions

On 1 May 2016, twelve years passed since Poland's accession to the European Union. On that date, the transitional period of the provisions concerning the need to obtain a permit for the acquisition of agricultural real estate by citizens of the Member States of the European Economic Area and the Swiss Confederation also expired. From that moment on, the aforementioned foreigners may acquire ownership rights to agricultural real estate located within the territory of the Republic of Poland on equal terms with Polish citizens.

At the same time, the possibility to acquire agricultural real estate on the basis of the principles regulating the formation of the agricultural system has been restricted for foreigners and Polish citizens, which has not been included in the research of this work, but will be undertaken later.

It should be stated that the introduced restrictions do not fully limit the activity of foreign citizens on the Polish agricultural real estate market, as exceptions have been made to the restrictions on foreign ownership of agricultural land.

It should be emphasised that the change in the zoning plan (location of the agricultural property in areas designated in the zoning plan for non-agricultural purposes) makes the agricultural property not subject to the following restrictions:

- rationing to purchasers of agricultural real estate,
- the National Support Centre for Agriculture does not have the right of pre-emption and redemption,
- the right of pre-emption does not apply to inheritance under a will,
- holders of shares may use such agricultural land as an in-kind contribution.

In conclusion, it should be emphasised that Polish legislation favours the establishment and enlargement of family farms. At the same time, the law does not prohibit the running or enlargement of farms other than family farms, as persons running such farms may conclude agricultural land lease agreements or purchase land with the consent of the National Agricultural Support Centre. Importantly, foreigners from EU countries who decide to run an agricultural holding in Poland and obtain the status of an individual farmer have the same rights as Polish farmers with regard to not only the acquisition of agricultural land, but also direct payments, insurance in the Agricultural Social Insurance Fund (Kasa Rolniczego Ubezpieczenia Społecznego) or other rights and obligations related to agricultural activity in Poland. Moreover, as a rule, all European Union Member States apply more or less restrictive and complex instruments for the protection and marketing of agricultural real estate. Despite the lack of a definition of a family farm in EU law, it is the family farm that is the basis of the European agricultural model.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

FX MORTGAGE LOANS IN POLAND – BENEFITS OF BORROWERS VS. FINANCIAL SITUATION AND CONDITIONS FOR DEVELOPMENT OF THE BANKING SECTOR

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Purpose: The aim of the article is to characterize the specificity of fx mortgage housing loans (especially in Swiss francs in Poland), to present the conditions for granting them and to assess the financial and economic consequences, as well as the impact on the banking sector of the cancellation of these loan agreements.
Design/methodology/approach: The article has been prepared based on studies of literature in the field of banking and finance, analysis of the legal acts and sectoral data from the Polish Financial Supervision Authority and the National Bank of Poland, as well as data coming directly from banks granting FX housing loans. The paper also uses own calculations using the annuity account.
Findings: The research conducted in the paper indicates that the case law of the Court of Justice of the European Union in the years 2019-2023 and the adopted line of case law of Polish courts, which mainly provides for the cancellation of mortgage loan agreements in foreign currencies, contributed to the emergence of systemic credit risk among exposures that were considered to have the highest quality in the banking sector. The cancellation of loan agreements became a source of long-term free capital for fx borrowers, for whom the terms of lending in foreign currency were in many cases more favorable compared to loans in the Polish zloty. Disputes related to foreign currency loans place a significant financial burden on banks. On the one hand they cause the need to establish provisions and write-offs, and on the other hand, they contribute to the erosion of the equity and reduce growth potential of banks and ability to compete. The value of losses due to solving the problem of Swiss franc loans in Poland, estimated at approx. PLN 100 billion, may cause the bankruptcy of individual systemically important banks, as exemplified by Getin Noble Bank, and significantly reduce the capital adequacy of the entire sector, thus significantly reducing its ability to finance the economy. The legal and monetary conditions of 2020-2023 strongly encourage borrowers to take legal action against banks and limit the willingness to conclude settlements.
Research limitations/implications: The study was conducted in the legal and financial conditions of 2023, in which the final number of lawsuits and settlements in the banking sector has been unknown, and thus the amount of real losses to be incurred by banks and the Polish economy.
Originality/value: The article fills a research gap in the area of assessing the situation of foreign currency borrowers in Poland, the legitimacy and financial consequences of the cancellation of Swiss franc loan agreements as a result of the CJEU case law of 2019-2023

systemically sanctioning the beneficial settlement of disputes concerning Swiss franc loans for the benefit of borrowers.
Keywords: foreign currency loans in Poland, cancellation of the agreement, Swiss franc.
Category of the paper: Research Paper, Viewpoint.

1. Introduction

FX mortgage loans are one of the most significant items in the loan portfolio of banks in Poland. Although their value and number in the banking sector have been declining since 2011, the financial implications of foreign currency lending for residential purposes and the legal risks associated with them are increasing. In particular, since 2015, when there was noted a significant increase in the valuation of the Swiss franc on international markets and when lawsuits against banks for foreign currency loans intensified, portfolios of foreign currency credit exposures have become particularly problematic for the banking sector. The lack of systemic solutions in Poland, both on the part of the National Bank of Poland, the Polish Financial Supervision Authority, the Ministry of Finance, as well as the Polish parliament has implied that the center of gravity in the relationship between the borrower and the banks has been shifted to the courts. The emerging proposals to resolve disputes by means of individual settlements with borrowers have met with a lack of wider interest on the part of banks, and the concepts of systemic conversion of loans have not been implemented due to the estimated high level of losses and the possibility of creating a risk for the entire sector. The situation of banks changed significantly with the emergence of the case law of the Court of Justice of the EU in 2019, which was strictly favorable to borrowers, and then in 2023, which set the direction for court rulings in Poland, essentially making it possible to cancel foreign currency loan agreements in court. The growing number of lawsuits began to significantly burden commercial banks in Poland, resulting in the need to enter a mass dispute with borrowers and to make significant provisions for expected unfavorable litigation outcomes. As a result, based on unfavorable court rulings, a stress factor has emerged in banks, which means a significant increase in the cost of risk, a decrease in profitability and the ability to develop sustainably. The necessity to repay funds on account of already repaid FX mortgage loans and the inability of banks to repay claims have become a source of benefits for foreign currency borrowers, allowing them to use free capital for many years or significantly reduce interest costs to a level not occurred in the economy.

This article discusses the research problem of the conditions, legitimacy, and impact of the cancellation of indexation or the entire FX housing loan agreements on the functioning of the banking sector in Poland. The aim of the article is to characterize the specificity of FX housing loans in Poland, to assess the causes and conditions of their granting and the financial as well as economic consequences of the cancellation of their agreements.

For the purposes of the article, two research hypotheses were formulated. The first one states that FX housing loans are a source of significant financial losses for borrowers. The second states that in Poland there are favorable conditions for amicable settlement of disputes between borrowers and banks.

The article fills a research gap in the assessment of the situation of foreign currency borrowers in Poland, the legitimacy and financial and economic consequences of the cancellation of Swiss franc loan agreements, as well as the effects of legal and financial risk on the emergence of systemic credit risk related to the portfolio of foreign currency loans in the light of the case law of the CJEU and common courts from 2019-2023.

2. Research methods

This article has been prepared on the basis of literature studies on the subject and analysis of sectoral data provided by the National Bank of Poland, the Polish Financial Supervision Authority and banks. The paper also uses studies of key legal acts, determining the court rulings in Poland in the field of FX housing loans. For the purposes of the study, the calculation of the amount of loan installments in Swiss francs and Polish zlotys was also carried out using the annuity account. The author compared the financial situation of borrowers indebted in Swiss francs and Polish zloty, assuming a 30-year mortgage loan of the equivalent of PLN 100,000, indexed with WIBOR 3M and LIBOR CHF/SARON 3M rates, with a credit margin of 1.5% and an exchange rate margin of 6%.

3. Results

3.1. The essence of FX mortgage loans

FX mortgage housing loans appeared in Poland thanks to the activity of banks with foreign capital (Brown, De Haas, 2012; Pann et al., 2010) and became one of the main types of credit exposures already in the period 2004-2005. Their popularity was mainly due to the relatively low interest rates – significantly lower compared to the interest rates on loans in the Polish zloty and easier availability than loans in the national currency due to the lower value of installments. The above features made mortgage financing in foreign currencies popular in many CEE countries, where active foreign currency financing began at a similar time as in Poland. On the Polish banking market, as in Hungary and Croatia, Swiss franc loans were the most widespread (Yeşin, 2013; Brown, Peter, Wehrmüller, 2009), which resulted from the relatively higher interest rate on the euro currency, as well as the high availability of Swiss franc financing in leading banks. Swiss franc mortgages were also intensively promoted and advertised (Alt et al., 2017). The massive borrowing of foreign currencies in Poland was also stimulated by the relative stability of the exchange rate of foreign currencies against the Polish zloty, and since 2004 also by the successively increasing value of the Polish currency against the Swiss franc. Other factors encouraging indebtedness in foreign currencies included favorable prospects for the development of the Polish economy after accession to the EU and confidence in the Swiss currency as a safe and reliable currency. In the case of other CEE countries, the lack of trust in domestic financial institutions and local currencies was also a motivation to borrow in foreign currencies (Fidrmuc et al., 2013). Undoubtedly, the process of development of Swiss franc financing in Poland was also secured by the banks themselves due to the possibility of obtaining financing abroad with relative ease and achieving additional benefits from foreign exchange and insurance of low own contribution of loans. As a result of banks' sales policy and high demand for mortgage loans reported by customers, in 2008, i.e. in the year of the outbreak of the suprime financial crisis, foreign currency loans in Swiss francs were the dominant type of exposure both in terms of annual growth and the value of the banking sector portfolio in Poland (Buszko, 2018). Thanks to them, Polish borrowers counted on lower interest rates and smaller installments, as well as faster repayment of loans against the background of PLN debts. However, these loans exposed them to exchange rate risk, weakened monetary policy and the impact of domestic interest rates (Brzoza-Brzezina et al., 2017), and generated systemic risk (Yesin, 2013).

The problem related to FX mortgage loans began to become apparent after the start of the financial crisis in 2008 and in the following years, when, as a result of a significant appreciation of the Swiss franc, there was an increase in the installments of foreign currency loans and the amount of debt to be repaid measured by the LtV ratio (Buszko, Krupa, 2015). In the case of the Polish market, the increase in the Swiss franc exchange rate was significantly offset by a sharp decline in interest rates in Switzerland, which fell below 0.5% in February 2009 and became negative in 2015. The accumulated risk for borrowers became apparent only after the outbreak of the war in Ukraine, when interest rates in Switzerland and the valuation of the Swiss franc against other currencies began to rise at the same time (Figure 1).

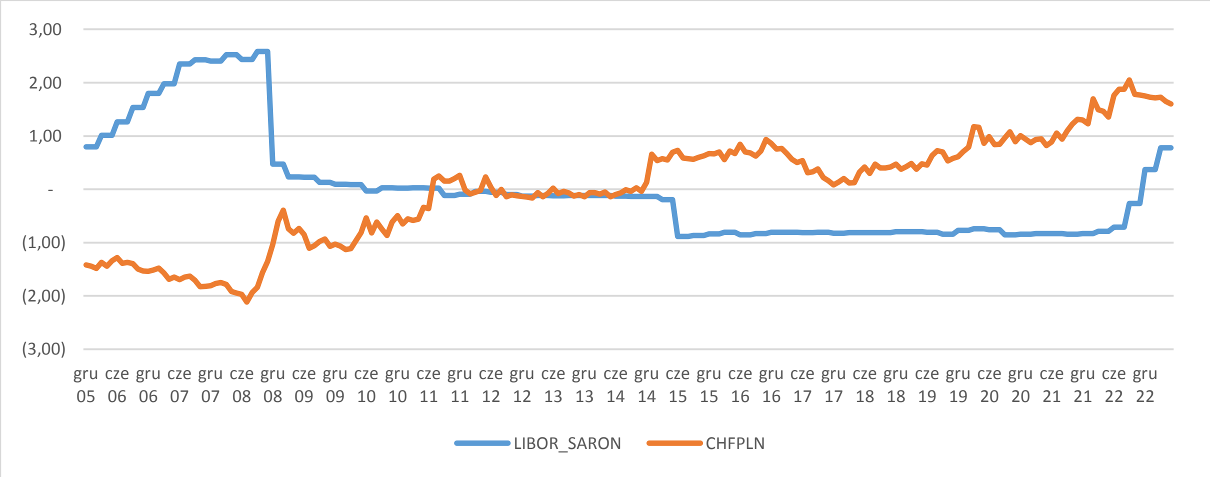

Figure 1. Z-score statistics of Swiss franc borrowers in the period 2005-2023.

Source: Author's own elaboration.

From the point of view of the borrowers, the change in the Swiss franc exchange rate was of key importance in the period under consideration, as it determined not only the current value of the installments paid, but also the value of the total outstanding debt, which was and still is the biggest issue of foreign currency loan agreements and at the same time the basis for the dispute with banks. Thanks to the increase in the franc exchange rate, the borrowers, despite the repayment of total installments equaled or even higher to the original loan, still had a large part of the debt to repay.

3.2. Legal regulations, supervisory and sectoral initiatives in the field of FX loans

Due to the significant demand for foreign currency loans in the years 2005-2006, and then changes in the interest rate and the exchange rate of the Swiss franc after the outbreak of the financial crisis of 2008-2009, attempts to manage the risk of foreign currency exposures on the part of the Polish Financial Supervision Authority, the Ministry of Finance, the National Bank of Poland and the Parliament were made relatively quickly, aimed at reducing the risk on the part of both banks and borrowers. Between 2019 and 2023, the case law of the Court of Justice of the European Union (CJEU) appeared, which, unlike previous solutions, had a systemic impact on the problem of foreign currency exposures in Poland. The systemic nature of the case law was based on the establishment of a line of jurisprudence for common courts, which strengthened the protection of borrowers, but also became a catalyst for litigation (Table 1). Unlike other countries in the region, especially Hungary, Croatia, Serbia, Cyprus, Montenegro and Romania, Poland has not carried out a systemic conversion of Swiss franc loans into the national currency to hedge against future exchange rate shocks (Fischer, Yesin, 2019).

Table 1.
The most important regulatory and legislative initiatives in the field of control and arrangement of foreign currency mortgage exposures in Poland

Unit	Year	Instrument	Description
PFSA	2006	Recommendation S	A regulation restricting access to foreign currency loans through higher requirements for creditworthiness and creditworthiness. Granting the loan required creditworthiness with an interest rate equal to the loan denominated in Polish zloty, with the amount 20% higher than required in the loan application. The client should sign a document on the acceptance of currency risk. A loan in Polish zloty should be presented to the customer as a loan of first choice.
Banks	2008-2009	Currency conversion to PLN	In the aftermath of the financial crisis and problems with the refinancing of Swiss franc liabilities, banks began to offer voluntary conversion of CHF loans into the Polish zloty.
PFSA	2009	Recommendation S(II)	The recommendation made it possible to repay foreign currency loans directly in foreign currencies and required the publication of transparent information on currency spreads and their calculation mechanisms.
Banks and private companies	2010	Online Currency Exchange Platforms	Reduction of the CHF spread to approx. 0.5% and free CHF transfers between bank accounts in Poland for loan repayment.
Parliament	2011	Anti-Spread Act – amendment to the Banking Law of 29 August 1997	The first act supporting foreign currency borrowers, which allowed for the repayment of foreign currency loans directly in foreign currency without additional costs of amending the loan agreement. Banks were required to open free foreign currency accounts for borrowers to repay loans and could not charge fees for using such accounts. Borrowers were not required to buy currency from the lending bank.
PFSA	2013	Recommendation S (III)	Foreign currency loans became available only to borrowers with income in the currency of the loan. A maximum of 25 years of credit was used to examine the creditworthiness of customers
PFSA	2010, 2013	Recommendation T	Introduction of an obligation to implement a transparent spread policy in retail currency exposures. The DtI should not exceed 50% (or 65%). In the case of foreign currency loans, a safety margin of 20% was required due to the change in the exchange rate.
Banks	2015	Acceptance of negative CHF LIBOR	Reduction in the value of installment repayments (return of part of the principal repaid by the borrower in installments).
Banks	2015	Reduction of CHF spreads	Voluntary reduction of the CHF/PLN exchange rate spread to approx. 1%.
Banks	2015	Extension or temporary suspension of loan repayment	At the customer's request, it has become possible to change the parameters of the loan (repayment time, grace period) in order to facilitate its repayment
Banks	2015	Opting out of additional security features	With respect to customers repaying their loans on time, additional costly collateral has been waived.
Banks	2015	Possibility to change the currency at the average NBP exchange rate	Possibility to convert the debt into Polish zlotys at the official exchange rate without having to pay the spread
Banks	2015	Flexible approach to loan restructuring	The ability to negotiate loan repayment in a way that is more affordable for the borrower

Cont. table 1.

Parliament	2017	Act of 23 March 2017 mortgage credit and supervision of credit intermediaries mortgage and mortgage agents	The ability to issue a mortgage only in the currency in which you receive your income or if you own the majority of your funds or other assets.
Ministry of Economic Development and Finance	2017	Regulation on a higher risk weight for exposures secured by mortgages on immovable property	Banks were obliged to apply a risk weight of 150% (which reduced their capital adequacy) for exposures secured by residential real estate, in the case of which the amount of the principal or interest instalment depends on changes in the exchange rate of a currency or currencies other than the currencies of the debtor's revenues.
Ministry of Economic Development and Finance	2017	Systemic Risk Buffer Regulation	Due to the portfolios of FX mortgage exposures, an additional capital requirement (3%) was introduced across the sector.
CJEU	2019	Judgment of the Court of Justice of the European Union in Case C-260/18	A contractual term that is considered unfair must, in principle, be regarded as never having existed, so that it has no effect on the consumer. The national court, having found that certain provisions of the contract were unfair, held on the basis of national law that the contract could not be continued. The possibility of substituting clauses deemed unlawful opens only if the cancellation would have particularly harmful consequences for the consumer.
Advocate General CJEU	2023	Opinion of the Advocate General Michael Collins in Case C-520/21	If the loan agreement between the bank and the borrower is found to be invalid due to unfair contractual terms being entered into by the bank, the bank has no right to demand any other benefits from the consumer than the return of the principal paid and the payment of statutory interest for delay from the moment of the demand for payment. On the other hand, in such a situation, the consumer has the right to pursue claims against the bank that go beyond the reimbursement of monetary benefits. The admissibility and merits of such claims under national law should be decided by the courts.
CJEU	2023	Judgment of the Court of Justice of the European Union in Case C-520/21	The consumer has the right to demand compensation from the credit institution in addition to the reimbursement of monthly instalments and costs paid for the performance of the contract and beyond the payment of statutory default interest from the date of the demand for payment. Banks do not have the right to demand remuneration for the use of capital. Such a request may be available to borrowers and the merits of such claims will be assessed in accordance with national law.
Banks	2023	Introduction of a settlement policy in disputes with foreign currency borrowers	Actively advocating for settlements with clients instead of lawsuits.
Supreme court	2023	Judgment of the Supreme Court in case II CSKP 1627/22	A defect in the "spread clause" does not have to cause the entire contract to collapse. It remains for the court to consider whether the market rate or the average rate of the National Bank of Poland may be introduced instead of the spread clause.

Cont. table 1.

CJEU	2023	Judgment of the Court of Justice of the European Union in Case C-287/22	The borrower may apply to the court for a freezing order, resulting in the suspension of installment payments for the duration of the process.
CJEU	2023	Judgment of the Court of Justice of the European Union in Case C-139/22	A court may declare a term of a contract to be unfair only because it is the same as a term entered in the register of prohibited clauses. A term of a contract cannot be considered unfair to some consumers and fair to others. The Bank is obliged to inform all borrowers about the essential features of the agreement and the risks associated with it, even if the consumer has adequate knowledge of the contract being concluded.

Source: Author's own elaboration.

3.3. Contesting contracts and transferring benefits to borrowers

When examining the reasons for questioning FX mortgage loans, the most frequently raised legal issue of foreign currency loans (in francs) were conversion clauses allowing for indexing the value of loan installments and debt amounts in accordance with the change in the exchange rate. It was considered abusive to refer to the exchange rates included in the banks' exchange rate tables, i.e. unspecified in the years of popularity of granting loans as to the method of determination and the possibility of change. In this regard, it was argued on legal grounds, that the failure to specify in the loan agreement restrictions related to the method of determining the exchange rate gave the bank virtually unlimited power to determine the amount of loan installments and the amount of borrowers' debt (Kwiatkowski, 2022; Wierzbowski, 2019). Both conversion clauses and exchange rate tables were the most frequently reported thematic areas of complaints to the Financial Ombudsman in Poland (Rzecznik Finansowy, 2016). Since the determination of the abusiveness of clauses generally concerns the moment of conclusion of the agreement, the recognition of the provisions as unlawful means that they are ineffective in relation to borrowers from the moment of conclusion of the agreement, and thus cannot be replaced by dispositive provisions. In general, the right of banks to unilaterally determine exchange rates while simultaneously applying different rates for loan disbursement and repayment (the so-called spread) was considered abusive in loan agreements (Mroczkowski, 2017). Since the settlements of disbursement and repayment of loan installments were carried out according to the tables of purchase and sale rates of currencies set by banks, where customers had no influence on the level of valuations, while being bound by the loan agreement, the bank acquired the right to decide on the amount of the loan disbursed and the repaid installments. It can be concluded that this violated the interest of borrowers and was contrary to the definition of a loan agreement governed by the provisions of Article 69 of the Banking Law. The banks were also accused of failing to adequately inform customers about the risk of changing loan installments due to a change in the exchange rate, as well as the fact that the customer was not sufficiently informed about the exchange rate at which the loan was to be repaid. It is assumed that the bank was free to choose the rate that was the most advantageous for it and at the same time the least favorable for the customer. Such a situation meant an uneven distribution of rights, obligations, and risks between the parties, leading to an imbalance in the contract and, at the same time, to the generation of additional risks on the part of the borrower (Mroczkowski, 2017).

The removal of clauses considered abusive in the agreement in Polish practice means either the removal of the mechanism of indexation of the loan to the foreign currency exchange rate while maintaining the interest rate on the loan according to foreign currency rates (a solution rarely used) or the complete cancellation of the agreement, which is not ultimately postulated in the case law of the Court of Justice of the European Union and Directive 93/13/EEC on unfair terms in consumer contracts (Council Directive, 1993). Until the end of September 2023, court rulings favorable to borrowers, especially at first instance, usually resulted in the complete cancellation of the loan agreement. In both cases of rulings in favor of the borrowers, there are actual benefits in the form of a reduction in the amount of debt and the amount of instalments or the return of all instalments paid with interest. This also applies to loans that have been fully repaid in the past. From 2023, it has become possible for borrowers to pursue additional claims in addition to the main benefit returned to the bank.

The benefits obtained by foreign currency borrowers because of the line of case law adopted by the courts in Poland translate into the possibility of long-term use of the debt without incurring the costs of interest and commission. This should be compared with the financial situation of borrowers taking out loans in the Polish zloty. In many cases, the cancellation of a loan agreement applies to borrowers who, having a loan in Swiss francs, were in a better situation compared to PLN borrowers. The profitability of CHF housing loans in relation to loans in the Polish zloty depended primarily on the moment of taking out the loan, i.e. the level of the exchange rate at which the loan was converted at the time of disbursement. A comparison of the value of instalments of Swiss franc and PLN loans taken out at two extreme moments, i.e. unfavorable (07.2008) and favorable (03.2009) exchange rate for loans in CHF, is presented in Figures 2 and 3.

Figure 2. Monthly difference in the amount of PLN vs. CHF instalment.

Source: Author's own elaboration.

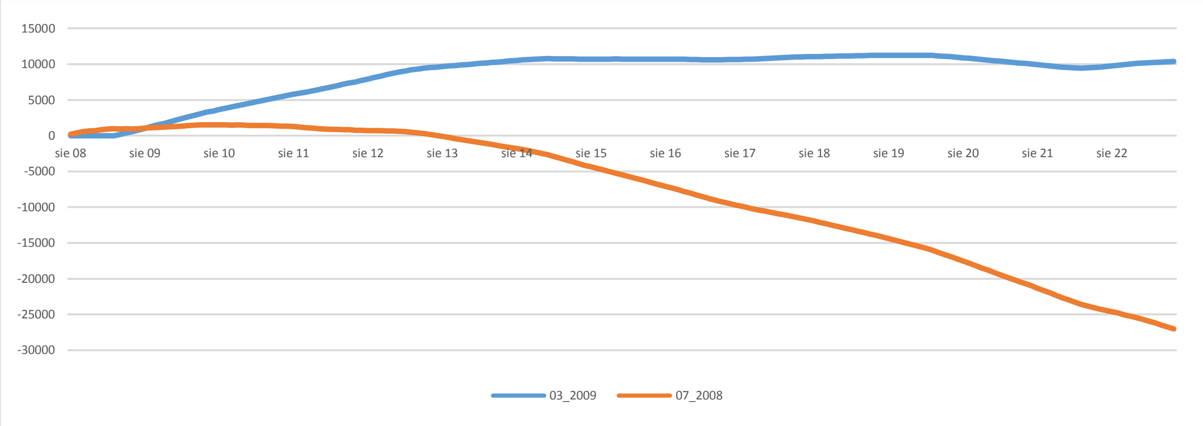

Figure 3. Cumulative differences in the amount of PLN vs. CHF instalments.

Source: Author's own elaboration.

The charts show a large variation in the profitability of foreign currency lending compared to the zloty. For 30-year foreign currency loans contracted in July 2008, the total repayment of installments until June 2023 is about PLN 27 thousand higher compared to PLN loans for every PLN 100 thousand. On the other hand, the repayment of the Swiss franc loan taken out in March 2009 gives the borrower about PLN 10,000 of benefits for every PLN 100,000 of debt compared to loans in the Polish zloty.

3.4. Financial condition of the banking sector – cost of loans

Borrowers entering disputes with banks and, in particular, court rulings in favor of foreign currency borrowers mean that there are significant risk costs for banks. In this case, the burden applies to many entities, including most banks listed on the stock exchange. Figure 4 presents portfolios of Swiss franc loans in listed banks.

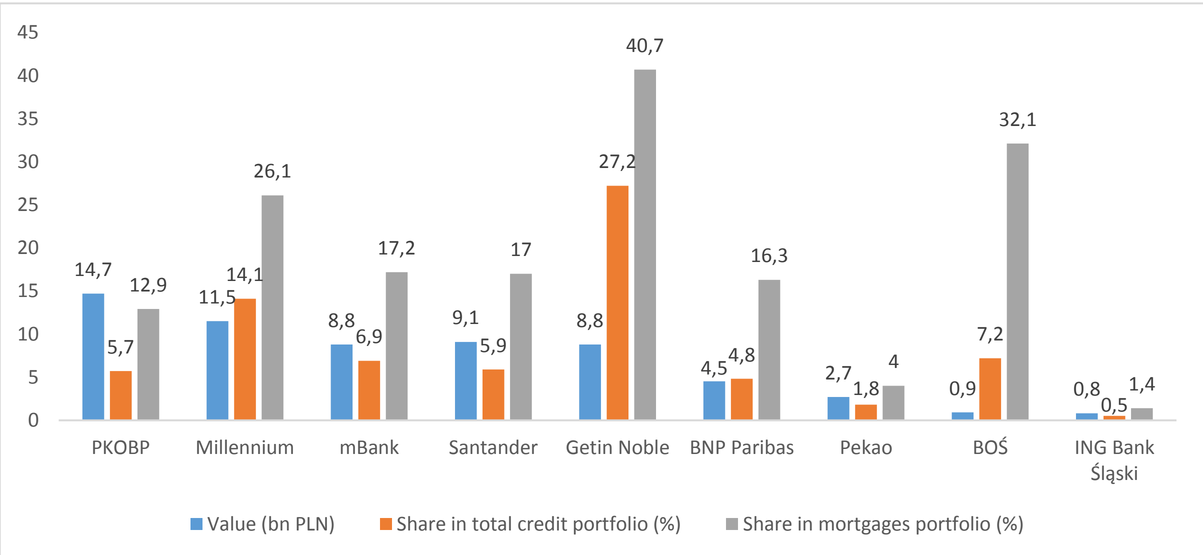

Figure 4. Swiss franc loans in banks' loan portfolios

Source: Author's own elaboration based on: https://www.bankier.pl/wiadomosc/Ile-frankow-maja-banki-I-kwartal-2022-r-8340133.html, 2023.10.05.

While the quality of FX housing loans remained stable until the end of 2021 and was not actually the subject of banks' concerns, the increase in the SARON rate and, in particular, the line of case law adopted by Polish courts after 2019 became a source of significant legal risk transmitted into credit risk and the possibility of instability in the domestic banking sector. Since 2021, FX housing loans have become the only type of exposure, apart from loans for individual entrepreneurs, that is rapidly deteriorating in quality. The NPL ratio for Swiss franc loans, which remained relatively stable in the period 2015-2019 at around 3%, began to grow dynamically, reaching 7.8% in September 2023 (BFG, 2023). Since 2019, i.e. the year of the favorable ruling by the CJEU, the costs of credit risk on Swiss franc loans have also started to increase in the banking sector. Due to the phenomenon of an increase in the number of lawsuits and non-repayment of instalments, combined with an increase in interest rates in Switzerland, the sector recorded a significant increase in impaired loans in relation to non-performing loans, as well as a significant increase in provisions for outstanding Swiss franc loans (Figures 6 and 7).

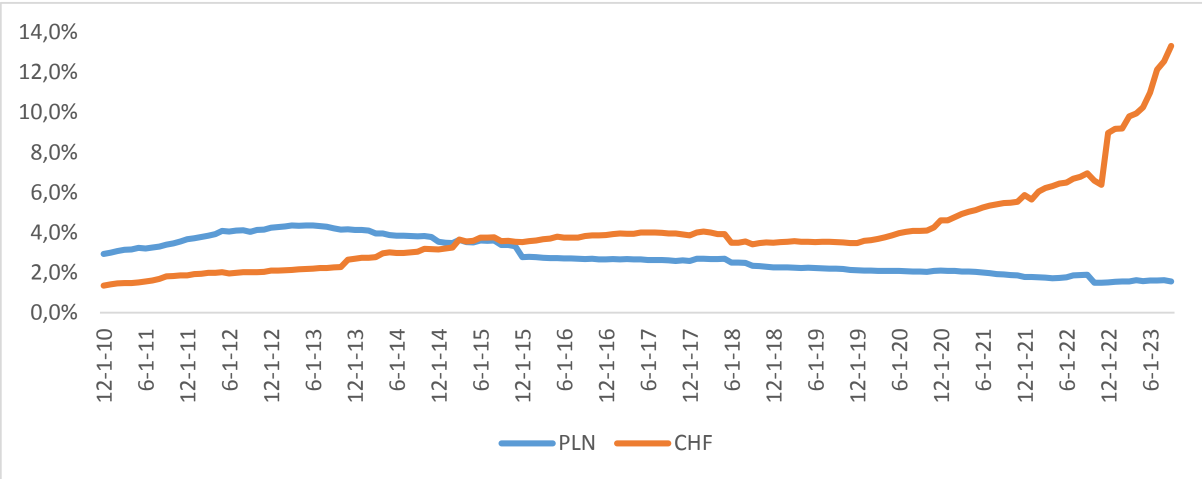

Figure 6. Ratio of impaired mortgage loans to non-impaired loans.

Source: In-house analysis based on KNF data.

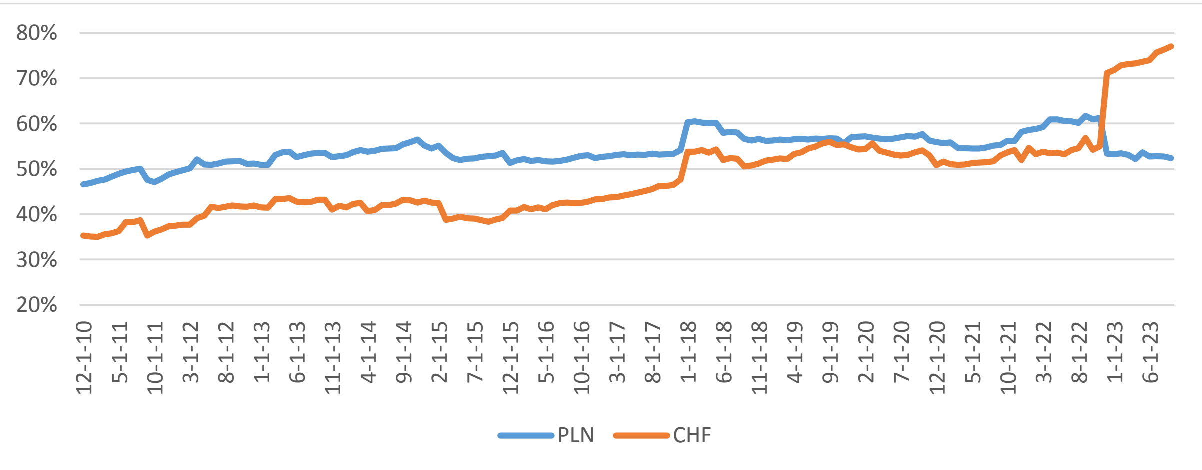

Figure 7. Charge of impaired loans.

Source: In-house analysis based on KNF data.

Because of the increase in the share of impaired loans and the increase in the value of provisions, the banking sector resulted in an increase in volatility and the level of the burden on net operating income of total costs of provisions and write-offs (Figure 8).

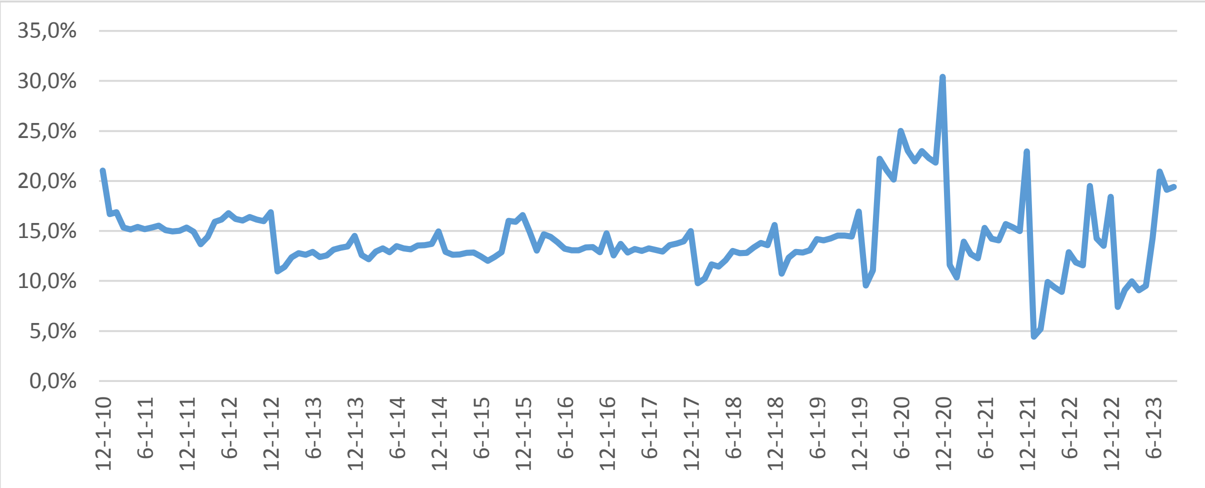

Figure 8. Burden of banks' net operating income on costs of provisions and write-offs.

Source: In-house analysis based on KNF data.

In June 2023, the portfolio of Swiss franc loans, due to the new provisions, impairment charges, repayments and settlements concluded with borrowers, shrank to approx. PLN 40 billion with 228 thousand agreements (ZBP, 2023), accounting for approximately 7.5% of the value of housing loans in the sector. This value is significantly lower than the value of the portfolio of these loans in 2011, which amounted to approx. PLN 168 billion (UKNF, 2023). Estimates by the Polish Financial Supervision Authority made in 2022, i.e. before the CJEU's case law (Jastrzębski, 2022) were formed, indicate that the total costs of cancelling or "de-francing" loan agreements will reach PLN 100 billion. In view of the expected unfavorable case law in connection with the CJEU's rulings from 2019-2023, the estimates of the Polish Bank Association have increased the value of costs for the banking sector to PLN 109 billion (ZBP, 2023). This value means that further provisions for Swiss franc exposures will need to be created in the coming years, beyond the level of approximately PLN 40 billion of provisions created by 2023. The cost estimates presented above pose a significant challenge to the entire banking sector and represent a loss of around 43% of banks' equity at the end of September 2023. The problem is undoubtedly that write-offs for litigation may hit banks unevenly, causing the insolvency of some systemically important entities. An example of such a bank bankruptcy due to the burden of loan write-offs was Getin Noble Bank SA from top 10 banks in Poland, which was de facto forced to restructure due to the risk arising from the Swiss franc loan portfolios. The cost burden on banks is reflected in a significant transfer of free capital from banks to a narrow group of Swiss franc borrowers. The benefit of the court rulings in their case can be confirmed by a significant number of lawsuits against banks selling Swiss franc loans, which already in 2022 exceeded 100 thousand, i.e. about one third of the agreements. In 2023, a total of more than 100,000 lawsuits were recorded in only eight operating listed banks. In the second quarter of 2023 alone, there were about 10,000 such lawsuits, confirming a significant growth dynamic. Along with the increase in the dynamics of the number of lawsuits, there was a decrease in interest in settlements with banks, the total number of which in 2023 amounted to over 77 thousand for listed banks (Cieślak-Wróblewska, 2023). The justification for this phenomenon is undoubtedly the very high rate (97-98%) of judgments in favour of borrowers by common courts (Banki..., 2023) and the possibility of suspending the repayment of installments for the duration of the process.

4. Discussion

Swiss franc loans cause a significant annual as well as total burden for the banking sector in Poland and today can be considered the greatest threat and source of systemic risk for the Polish banking sector. Since Swiss franc loans have not been granted since 2011-2012, their real portfolio only shows a tendency to deteriorate in quality. Nevertheless, it should be remembered that until the CJEU ruling, which was favourable to borrowers, these loans were characterized by a very high quality and regularity of repayment compared to all types of loans. The jurisprudence in the cases of Swiss franc borrowers, in particular the judgments of the Court of Justice of the European Union (CJEU) and the activity of law firms, have significantly shaped the conditions for the stability and functioning of the banking sector.

When assessing the problem of the alleged abusiveness of the clauses of foreign currency loan agreements, it should be pointed out that it is difficult to assume that banks operating in Poland within the framework of the continental model of the financial system, i.e. based on long-term relations, mutual benefits and public trust, deliberately sought to act systemically to the detriment of customers and the desire to achieve short-term profits at the expense of the loss of long-term stable proceeds from relations with their clients. As a rule, the structure of foreign currency loans was to generate benefits on both sides, i.e. profits from interest margins and foreign exchange on the part of banks and savings on account of reduced loan installments compared to loans in the Polish zloty, and possibly shortening the loan period on the part of borrowers. Although it was argued that their construct was only intended to increase the demand for new banking products (Żywicka, 2018), the dominance of the Swiss currency financing rather than in euro proves that customers were aware of the benefits which they expected and preferred to borrow at a lower rate in less popular currency than to take less beneficial loans but given in the commonly available European currency. It is worth noting that the very problem of risk related to the possible weakening of the zloty against foreign currencies was noticed by representatives of the banking sector as early as 2005, which resulted in the raising of proposals for solutions limiting lending in foreign currencies (ZBP, 2015). However, the real slowdown in the foreign currency lending processes occurred only because of the limited availability of the Swiss franc after the crisis of 2008-2009 and the increase in foreign exchange risk, but not as a result of the recognition of the terms of loan agreements as abusive. The abusiveness of contractual clauses began to be raised primarily because of the significant appreciation of the Swiss franc, i.e. about 10 years after the start of the lending process. At that time, a discussion devoted to the issue of indexation and the effects of potential cancellation of clauses or loan agreements began (Rzecznik Finansowy, 2016; Mroczkowski, 2017). Moreover, the possibility of losing the financial solvency by the households (Jagoda, Kryska, 2016), the effects of CHF loans systemic conversion into PLN or the legitimacy of granting financial support to Swiss franc borrowers against the background of the situation of borrowers in PLN were also analyzed (Buszko, 2016; Barembruch, 2016; Buszko, 2018).

The high appreciation of CHF versus PLN, which started the legal disputes in Poland about Swiss franc mortgages, resulted in an increase in loan installments, but in the case of many Swiss franc borrowers, it did not mean that their financing became less favorable compared to PLN loans. Nevertheless, the fact of a gradual increase in the amount of loan installments and the persistence of a high amount of debt to be repaid due to its valuation at a high exchange rate of the Swiss franc contributed to a massive dispute with banks.

The conversion (indexation) mechanism of Swiss franc loans, which is the basis for disputes and is evaluated as abusive, does not necessarily have to be considered as detrimental to the interests of borrowers from a financial point of view. Firstly, the use of loans indexed to the Swiss franc was intended to protect customers against the risk of unwanted change in the exchange rate (weakening of the franc) between the moment of signing the agreement and the moment of disbursement of the loan. This was particularly important for loans intended for construction and housing purposes and disbursed in tranches. Secondly, if Swiss franc loans were paid to customers in the lending currency, i.e. Swiss francs, there would be another significant risk, i.e. the need to transfer the Swiss franc to another foreign exchange institution and the risk resulting from the foreign exchange in a place other than the lending bank. This fact would mean that ultimately the loan amount could not go to the seller of the property, and thus put the borrowers in a situation where the terms of the loan agreement have not been fulfilled, i.e. the loan has been used in accordance with the declared purpose. In this context, the use of both indexation and conversion should be justified for the exchange of the loan amount and the repayment of instalments. In the context of favorable exchange rates, the problem has been properly solved by the introduction of recommendation S (II) by Polish Financial Supervision Authority (KNF) and the amendment to the Banking Law Act in 2011, giving the possibility of repaying loans directly in the currency of lending and purchasing the currency at any place and time. The introduction of the above legal solutions contributed to the creation of currency exchange offices, and thus to a new model of buying and selling currencies in Poland (Kowalewska, 2019).

Since the court rulings in Poland predominantly decide on the cancellation of loan agreements, this means that borrowers effectively sanction the use of free capital by borrowers in the long term. Free capital does not exist under normal market conditions, much less is it possible for it to function cost-free in a systemic form. An inherent feature of capital is the presence of an opportunity cost, an interest or dividends. The problem of using free credit capital in Poland has become strengthened by the possibility for borrowers to pursue claims for loans that have already been repaid. Therefore, it can be concluded that the scale and costs associated with foreign currency loans will continue to burden the sector in the long term, and in the event of a decrease in interest rates in Poland, the burden of the costs of provisions and write-offs on foreign currency loans will become more significant.

Capital transferred at no cost to borrowers is a direct burden on banks' own funds, which are the foundation for financing economic development. Passing on all interest benefits to borrowers means a loss of equity by banks and a transfer of the lost amount to customer deposits. This action, in addition to the potential threat of bank failure and the erosion of funds stabilizing operations, reduces the potential for financing economic development by banks to a degree of 12.5 times for every PLN 1 loss due to the deterioration of the capital adequacy ratio. At the same time, it is difficult to expect that the funds obtained by borrowers in court will be spent on an ongoing basis and will stimulate demand in the economy.

In a broader context, if we consider the activity of banks as institutions acting to support the creation of the wealth of the entire society, the costs of cancelling Swiss franc loans will reduce the ability and willingness of banks to finance the needs of civilizational changes, i.e. especially the process of digitization and financing the energy transition. In the first area, banks may lose their high position to digital but unregulated institutions, which may lead to the emergence of new systemic risks. In the second area, the use of foreign financing may prove to be crucial. Banks in Poland will have funds to lend, but they will not be able to use them due to too low capital adequacy.

Thanks to the costs of cancelling loans, banks will also have a limited investment attractiveness. As a result, it should be expected that there will be problems with their financial supply in the event of the need for recapitalisation or for development purposes.

The cancellation of Swiss franc loan agreements results in the emergence of social costs, especially equal rights for borrowers taking loans in the Polish zloty. As it was indicated in the earlier part of the paper, the financial situation of foreign currency borrowers against the PLN ratio largely depends on the moment of taking out the loan. Some foreign currency borrowers, especially those taking loans at the end of 2008 and later, who thanks to Swiss franc loans are already benefiting from cheaper financial benefits compared to borrowers in the Polish zloty, will receive additional benefits. Therefore, there is a problem of unequal treatment of different groups of borrowers.

The very favorable case law of the Court of Justice of the European Union combined with the case law of common courts developed in Poland, relatively high interest rates and the diversified financial situation of Swiss franc borrowers compared to PLN borrowers result in a significant weakening of the potential to conclude settlements with banks. In fact, the certainty of winning the lawsuit, combined with the possibility of suspending the repayment of installments and the lack of the need to pay interest, given the very developed market of litigation services provided by law firms, encourages people to take legal action rather than exchange the Swiss franc debt for a higher-interest PLN loan.

Shifting the burden of the dispute between banks and borrowers to the courts has resulted in loans with the best repayment quality becoming loans of very rapidly decreasing quality. At the same time, they became the fastest decaying loans among all loans in Poland. Due to their presence in all major banks in the banking sector in Poland, they thus become a de facto source of credit risk in the systemic sector, which would not have materialised without the CJEU's case law.

The legal risk and, as a result, the credit risk related to foreign currency loans was generated due to the increase in instalments of Swiss franc loans, even though the exchange rate risk was mitigated for a long time by the decline in interest rates in Switzerland. Against this background, housing loans in the Polish zloty turned out to be riskier in 2022 due to a sharp increase in installments solely because of the change in interest rates. Therefore, the litigation experience of Swiss franc borrowers may be transferred to the group of mortgage borrowers borrowing in the Polish zloty, which would mean the collapse of the banking system in Poland.

5. Conclusions

FX mortgage housing loans, particularly those indexed or denominated in Swiss francs, should be considered the biggest contemporary challenge facing the banking sector and the Polish financial system. The jurisprudence of the Court of Justice of the European Union (CJEU) and then of common courts in Poland resulted in a massive establishment of provisions in banks and an increase in write-offs on the loans under consideration and estimates of the costs of this process carried out by the Polish Financial Supervision Authority and the Polish Bank Association indicate the amount of up to PLN 100 billion. Therefore, credit risk caused by legal risk materialized in Poland. This is an unprecedented situation and will undoubtedly weigh heavily on both the sector and the financial system for many years to come. The Polish banking sector has never experienced mass disputes with clients and undermining the basic types of contracts used in the economy. The costs of disputes, both current and future, are likely to be passed on to customers and, ultimately, to the economy and the society. It is also difficult to expect that banks will be able to develop and strengthen their ability to compete on the market with other entities, including those from abroad, by conducting long-term litigation with their clients. Behind banks, which are generally commercial institutions, there are owners who expect a certain rate of return on capital. Burdening banks with the costs of cancelling loan agreements will therefore create pressure to recover lost profits in the form of higher interest margins and an increase in commissions and fees. While in the latter case, the possibility of passing on the costs to customers will be limited due to the activities of digital entities (fintech or neobanks), the burden on customers will be primarily in the form of higher interest rates on loans and lower interest rates on deposits. Due to the different burden on banks of foreign currency loans, the serious threat of losses or bankruptcy of some systemically important entities may be a problem.

The need to safeguard the interests of consumers, who are the weaker party in their relationship with financial institutions, should not, as a rule, consist in cancelling contracts, but in restoring the contractual balance of the parties and remedying the actual financial damage caused by the financial institution, if any. Such a loss may be considered a situation in which the bank would overstate the conversion rate of installments on the days of repayment of loan installments in relation to the other days of the month. Otherwise, there is unjust revenue and enrichment. In the case of Swiss franc borrowers who took out loans at a relatively high CHF valuation (2004-2005 and 2009-2011), this financing is more advantageous in terms of the value of installments paid so far compared to loans in the Polish zloty. The first hypothesis put forward in the introduction should therefore be considered negatively. The real problem of Swiss franc borrowers, which remains to be solved, is the very value of the outstanding debt. Here, therefore, the actions of the regulator or legislator are needed.

Questioning Swiss franc loans due to the volatility of the exchange rate and interest rate, as well as the case law that has been developed in Poland in this area, may indicate that virtually any product indexed to an economic variable in the economy may be challenged in court, provided that the change in the index is not in line with the expectations of the financial institution's customer. Index-linked products are particularly desirable in a high interest rate environment with the expectation to fall in the future. If index-linked financial products based on long-term contracts were unavailable, fixed-rate products would generate excessively high costs, which could also be challenged in court.

The case law of the Court of Justice of the European Union (CJEU) and the case law of common courts in the field of Swiss franc loans, combined with the environment of increased inflation, and thus interest rates, depreciate the possibility of concluding settlements between borrowers and banks. The certainty of winning in court and the reluctance to take on debt in high-interest national currency significantly discourage out-of-court dispute resolution. Thus, the second hypothesis put forward in the introduction of the paper should be negatively verified.

To sum up this paper, it is necessary to point out the limitations of the conducted research and conclusions regarding the results obtained. In the first place, it should be emphasized that the study was conducted in the legal and financial conditions of 2023, in which the final number of lawsuits and settlements in the banking sector, and thus the volume of possible losses to be incurred by the sector, was unknown. On the legal basis in Poland, the borrowers have been given the right to pursue claims for the repayment of the loan as well as other additional costs. In addition, it is now possible to seek reimbursement of foreign currency loans that have been fully repaid in the past. In 2023, the possibility of implementation of the systemic solution to the problem of disputes between borrowers and banks (other than through the lawsuits) was also unclear. Although the issue of mortgage lending in foreign currencies concerns many countries in the CEE region, Poland is the only country where the resolution of disputes has been fully transferred to common courts with all its consequences. Therefore, the Polish example should be considered rather as specific and not necessarily a model for solving the problems of foreign currency lending in other countries of the region.

Further research in the scope of foreign currency lending should focus primarily on the conditions of systemic (out-of-court) solutions to the problem of borrowers' claims against banks. At the same time, the experience and problems of foreign currency lending should be used to conduct research around the possibility of preventing the occurrence of legal risk of a systemic nature, including the development of a universal, commonly accepted, and indisputable model of mortgages.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

MULTIVARIATE SUSTAINABLE DEVELOPMENT GOALS ANALYSIS – COMPETITIVE POSITION OF EUROPEAN COUNTRIES IN 2022

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Purpose: The aim of this paper was to evaluate competitive position of European countries based on the achievement levels of the Sustainable Development Goals in 2022. The tool to achieve the goal was multidimensional comparative analysis.
Design/methodology/approach: The paper presents multivariate analysis based on euclidean distance from the Positive Development Pattern (PDP) to create ranking and to identify those European countries, which were characterized by the highest levels of individual SDG. The research was based on data selected from Europe Sustainable Development Report (2022). From 37 European countries there were selected 32 countries to analysis. The criterion for selecting countries (objects) was the completeness of available data. In the next step of the research was performed the analysis of indicators (SDG – Sustainable Development Goals) completeness.
Findings: The results of the multivariate competitiveness analysis of 32 European countries based on their performance on the Sustainable Development Goals identified which countries performed best and which performed worst in this context. In addition, it was identified which countries performed best and which worst in achieving each of the 16 Sustainable Development Goals considered (for one of the SDGs, data was not complete).
Research limitations/implications: For a proper interpretation of the assessment for each country under study, an in-depth knowledge of its specificities, both in the economic, social and environmental dimensions, is also necessary. It may then turn out that the achievements in the field of individual goals result, for example, from the baseline level in a given area or the real possibility of taking specific actions.
Practical implications: Whereas the challenges faced by countries today, an assessment of the multivariate position of countries, taking into account their achievements in relation to the Sustainable Development Goals, seems to be entirely appropriate, as it provides a picture of the

potential of individual countries in relation to their ability to cope with the problems that the international community has defined as key, and has included in the form of the SDGs.
Social implications: The reference to sustainable development in the context of evaluate countries and their competitiveness fits in with the need to raise public awareness of the challenges of making this a reality and the role of countries in this process.
Originality/value: The research results can contribute to a broader understanding of what a country's competitiveness is in the modern world and what sustainable factors shape it. The approach presented can complement and make more realistic the traditional one-dimensional competitiveness rankings, especially in light of multivariate analysis and the challenges faced by modern states.
Keywords: Sustainable, Multivariate, SDG, Development Goals.
Category of the paper: Research paper.

1. Introduction

In recent years, sustainable development has become a popular concept, both in public debate and academic discourse. The most well-known definition of sustainable development is the one proposed in the report published by the World Commission on Environment and Development (WCED) - "Our Common Future", where it is stated that sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Sustainable development encompasses not only environmental aspects but also economic and social dimensions (Brundtland, 2012). It also combines economic growth, social justice, and environmental protection (Sachs, 2015). An integral part of this concept are three indicated areas: economic, social, and ecological (e.g., Giddings et al., 2002; Rogall, 2010; Schaefer, Crane, 2005).

While some authors point to various moments in the creation of the sustainable development concept, the most important seems to be reaching back to the beginnings of the formation of social life (Barrow, 1995; Du Pisani, 2006). Undoubtedly a turning point in the process of its development can be considered the United Nations Conference on the Human Environment in Stockholm in 1972, where the problem of ecological limitations of world development was widely discussed (UN, 1973). In the following decades, a number of initiatives were undertaken related to refining and popularising this concept. In the context of the aim of this article, an important issue is the matter of reporting the sustainable development. The concept had also an impact on the reporting information from countries perspective and financial reporting of companies. J. Elkington, based on the concept of sustainable development, introduced the concept of "triple bottom line", which expanded the traditional framework of corporate reporting to include environmental and social aspects beyond the previously only considered financial aspects (Elkington, 1997). Considering the development of the concept of sustainable development, an important issue was the subsequent attempts to operationalise it by presenting the concept in the form of goals that stand before the modern world, and therefore also before each organisation and country. The first such attempt was made during the Millennium Summit in New York in 2000, where 8 Millennium Development Goals were formulated. These included: eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating HIV/AIDS, malaria, and other diseases; ensuring environmental sustainability; and developing a global partnership for development (UN, 2000). In 2015, during the United Nations Summit on Sustainable Development held in New York, a summary of the achievements to date in the field of sustainable development was made, and 17 Sustainable Development Goals were defined and adopted (UN, 2015). Their compilation is presented in figure 1.

Figure 1. Sustainable Development Goals (SDG).

Source: https://www.gov.pl/web/polishaid/sustainable-development-goals, 10.11.2023.

The structure of the defined goals is often described as the 5Ps. Thus, goals 1-5 relate to social issues (people), goals 7-11 fit into the economic dimension (prosperity), goal 6 and goals 12-15 address ecological challenges (planet), goal 16 focuses on ensuring broadly understood peace (peace), and goal 17 – indicates the necessity of cooperation for sustainable development (partnership). The realization of the last two goals is essential for creating conditions to achieve social, economic, and environmental goals (UNDP, 2015). These goals are further divided into 169 targets, through which the extent to which an organization meets the requirements of sustainable development can be assessed. In the traditional approach, individual countries are evaluated using the above goals, but the proposed goals can be used to assess sustainable development in the case of enterprises as well (Adams et al., 2020; Camilleri, 2017). Fulfilling the requirements of sustainable development by individual enterprises consequently affects the position in terms of sustainable development occupied by individual countries. Undoubtedly, the realization of sustainable development goals by a large group of enterprises raises the implementation of sustainable development within a given country. In the case of enterprises, it should be noted that the realization of sustainable development goals affects the perception of a given enterprise by its various stakeholders and consequently influences the purchasing decisions of customers (Frank-Martin et al., 2009; Qorri et al., 2018). The use of the concept of sustainable development is not only an ethical or regulatory obligation but also a key factor in creating value and building competitive advantage of county. Implementing sustainable development in country also affects more efficient cooperation with stakeholders i.a.: citizens, non-governmental organizations, and other entities. Such partnerships can lead to increased innovation and efficiency of the state. The realization of the concept of sustainable development helps countries better manage risk and compliance with regulations. Countries that proactively address environmental and social issues can avoid costs associated with regulatory violations and negative impacts on their reputation.

The aim of this paper was to evaluate competitive position of European countries based on the achievements of the Sustainable Development Goals in 2022. The tool to achieve the goal was multidimensional comparative analysis.

2. Competitive position concept

Competitive position is a concept that can be used to present various areas of activity of both a single organisation and a group of organisations. The concept of competitive position can be applied not only to the entire company but also to its individual products. The competitive position of a product refers to how the product is perceived in the market compared to competitive products (Keller et al., 2008; Aaker, 2012; Grant, 2021; Tidd et al., 2020). The concept of competitive positioning can also be applied to individual departments within a company or projects undertaken by companies (Dziadkiewicz, 2021). In this context, the competitive position refers to the efficiency, productivity, innovativeness, and overall effectiveness of the department compared to similar departments in other enterprises operating in the industry (Ulrich, 1996; George et al., 2004; Christiansen, 1997). It seems that in the literature, the concept of competitiveness is most often related to enterprises. The competitive position of an entity is usually defined as its ability to maintain and increase market share, achieve high profitability, and company value compared to competitors operating in the market. According to Porter, competitiveness is the ability of an entity to defend against five competitive forces that shape the structure of the industry in which the enterprise operates. The competitive position of an entity is related to the choice of strategy that allows the enterprise to gain an advantage over its competitors (Porter, 1980). Meanwhile, according to Kotler, the competitive position of an enterprise is related to the place it occupies in the minds of consumers in relation to the place occupied by competitors (Kotler et al., 2012). The concept of competitive position can also be used to present several entities, such as an industry, a selected region, or the economy of an entire country. The competitive position of an industry refers to the overall ability of the industry to generate value and profits in a market context, taking into account factors such as the intensity of competition, barriers to entry, growth potential, profitability, and innovativeness (Porter, 1980). Meanwhile, the competitive position of a country refers to the ability of a given state to create and maintain an environment conducive to economic growth, which translates into a high standard of living for its inhabitants (Porter, 1990). Perfect example of implementing country competitive position concept are annually reports of the World Economic Forum. Those reports evaluates the competitiveness of countries based on a wide range of indicators, including: infrastructure, macroeconomic stability, health, education, labour market, financial development, market size, business dynamics, and innovativeness.

It can be considered that the competitive position always relies on the comparison of different entities. If a given entity (product, department, enterprise, industry) has a better competitive position, it ensures benefits over other entities. In the literature, we can find a range of tools used to measure the competitive position of the analysed area. The most commonly used tools for measuring competitive position include: market share (Kotler, 2012); profitability (Brigham, 2013); brand value (Aaker, 1991); innovativeness (Tidd, 2020) or customer satisfaction (Reichheld, 2003).

These are just selected measures of the competitive position of enterprises. In the case of analysing the competitive position of a group of enterprises, a region, or a country, there is also a whole set of tools used to measure competitive position. It seems that to assess the competitive position of a country, the concept of sustainable development can be used, utilising measures indicating the achievement of each of the 17 goals indicated by the UN. Such an assessment of a country indicates its position in terms of all aspects related to the sustainable development of that country.

3. Methodology

The research was based on data selected from Europe Sustainable Development Report (2022). From 37 European countries there were selected 32 countries to analysis. The criterion for selecting countries (objects) was the completeness of available data. In the next step of the research was performed the analysis of indicators (SDG – Sustainable Development Goals) completeness. It turned out that indicator number 14 (SDG 14 – Life Below Water) had to be removed from the list of indicators due to lack of data availability for every country. Therefore the list of indicators was: SDG1 – No Poverty, SDG2 – Zero Hunger, SDG3 – Good Health and Well-Being, SDG4 – Quality Education, SDG5 – Gender Equality, SDG6 – Clean Water and Sanitation, SDG7 – Affordable and Clean Energy, SDG8 – Decent Work and Economic

Growth, SDG9 – Industry, Innovation and Infrastructure, SDG10 – Reduced Inequalities, SDG11 – Sustainable Cities and Communities, SDG12 – Responsible Consumption and Production, SDG13 – Climate Action, SDG15 – Life on Land, SDG16 – Peace, Justice and Strong Institutions, SDG17 – Partnerships for the Goals. Whereas the group of objects was 32 countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom. The countries that were included in the analysis due to not available data were: Bosnia and Herzegovina, Liechtenstein, Montenegro, North Macedonia and Serbia. As a result, In the study there were 512 observations (indicators).

Depending on the complexity of the problem, the pattern of proceeding in this analysis may vary (Śledzik, 2014; Śledzik, Barembruch, 2015; Śledzik et al., 2023). Based on the views presented in the literature, the verification of the level of correlation between variables was abandoned (Kukuła, 2000; Balicki, 2014).

The paper presents the possibility of using multivariate analysis based on euclidean distance from the Positive Development Pattern (PDP) to identify those European countries, which were characterized by the highest levels of individual SDG. The procedure consisted of the following stages of the calculation:

1. First step of the study was to transform transformation of non-numeric ratings and trends from Europe Sustainable Development Report 2022 into numerical data (grades). Therefore rate "SDG achieved" received a numerical value 4, "Challenges remain" received a numerical value 3, "Significant challenges remain" marked as 2 and "Major challenges remain" as 1. Next trend changes assigned to the non-numeric ratings were marked accordingly: "On track" as 1,25, "Moderately Increasing" as 1,125, "Stagnating" as 1 and "Decreasing" as 0,75. Finally, indicators for analysis were constructed as a multiplier of the rating and trend in numerical form. The result is a matrix od European countries (objects) and 512 numeric indicators:

$$X = [x_{ij}] \ (i = 1, \ldots, \mathrm{n};\ j = 1, \ldots, \mathrm{m}) \tag{1}$$

   where: x_{ij}- value of j-th indicator on the i-th object.

2. Due to the fact that the features can be stimulants, destimulants or nominants before next step there should be (if necessary) used procedure to bring uniformity of characteristics (features). In the study every indicator (SDG) was stimulant therefore, there was no need to transform the variables. The second step of the calculation was to bring the different variables comparable titers with standardization. As a result of diagnostic standardization of each variable will have a mean value of 0 and standard deviation equal to 1. Standardization is made according to the following formula:

$$z_{ij} = \frac{x_{ij} - \bar{x}_j}{S_j} \quad (i = 1,\ldots,n,\ j = 1,\ldots,m) \tag{2}$$

where:

$\bar{x}_j$ - the arithmetic mean of the j-th features,

S_j - standard deviation of the j-th features,

z_{ij} - standardized value of j-th features of the i-th object.

3. The third step was to estimate the z_pj - Positive Development Pattern (PDP) by setting the maximum value in each column of standardized features.
4. Calculating the distance of each object from the PDP using Euclidean distance determined by the formula:

$$d_i = \sqrt{\sum_{j=1}^{m} \left(z_{ij} - z_{pj}\right)^2} \quad (i = 1,\ldots,n) \tag{3}$$

where: z_{pj}= max { z_{ij}} – Positive Development Pattern (PDP).

5. Due to the fact that the synthetic variable determined according to formula (3) is not normalized, the postulate of normativity (Tarczyński, 2006) was used and the preference of the variable was changed, where higher values will indicate a higher level of the examined phenomenon. The proposed SMD (Synthetic Measure of Development) indicator will therefore take values from 0 to 1. The following formula was used for this purpose:

$$SMD_i = 1 - \frac{d_i}{\bar{d}_i + aS_d} \ (i = 1, ..., \mathrm{n}) \tag{4}$$

where:

SMD - Synthetic Measure of Development for *i*-th object,

d_i - Euclidean distance from PDP,

$\bar{d}_i$ - arithmetic mean of d_i,

S_d - standard deviation of d_i,

a – parameter satisfying the inequality $a \geq \frac{\max d_i - \bar{d}_i}{S_d}$ (5)

As a result there were created multivariate Synthetic Measure of Development - SMD ratio with range from 0 to 1 for each of 32 objects (European countries). Sorted from highest to lowest value of SMD ratio became a ranking of competitive position of the best countries from SDG point of view in 2022. The main advantage of multidimensional analysis is the fact that this indicator makes it possible to rank selected countries taking into account all 16 SDGs at the same time.

4. Results

Within Europe, there are major differences in SDG performance. The highest grades form SDG1 (no poverty) point of view in 2022 was observed for Belgium, Czechia, Iceland, Ireland, Poland and Slovenia (see Table 1). It means that in those countries has i.a. the lowest estimated percentage of each country's population that is living under the poverty threshold of US$5.50 a day in purchasing power parity (PPP) at constant 2011 prices. In those countries is the lowest number of people who experience at least 4 out of 9 following deprivations items: cannot afford:

1. to pay rent or utility bills,
2. keep home adequately warm,
3. face unexpected expenses,
4. eat meat, fish or a protein equivalent every second day,
5. a week holiday away from home,
6. a car,
7. a washing machine,
8. a colour TV, or
9. a telephone.

The lowest grades in this development goal was observed for Romania and Türkiye.

The highest grades form SDG2 (zero hunger) was observed for Bulgaria, Czechia and Ireland. It means that in those countries is i.a.:

1. the smallest percentage of the adult population that has a body mass index (BMI) of 30kg/m^2 or higher, based on self-reported height and weight,
2. percentage of its potential yield in the three annual crops using the most land area, weighted for the relative importance of each crop in terms of surface area.

The lowest grade in this development goal was observed for 10 countries: Cyprus, Finland, France, Iceland, Italy, Latvia, Lithuania, Netherlands, Spain and United Kingdom.

From SDG3 (Good health and well-being) perspective best countries is Switzerland. Romania turned out to be the country with the lowest grade in this aspect. In this evaluation it was taken into account i.a.:

1. life expectancy at birth,
2. gap in life expectancy at birth among regions,
3. population with good or very good perceived health,
4. gap in self-reported health, by income,
5. new cases of tuberculosis infection per 100,000 population,
6. standardised preventable and treatable mortality,
7. suicide rate,
8. people killed in road accidents,
9. population engaging in heavy, episodic drinking at least once a week,

10. smoking prevalence,
11. people covered by health insurance for a core set of services.

Table 1.
Grades of SDG for chosen European countries in 2022

	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG13	SDG15	SDG16	SDG17
Austria	4,5	2	3,375	3,375	3,375	3	5	3,375	4,5	5	3,375	1	1	1	3	2
Belgium	5	0,75	3,375	2,25	3,375	2,25	3,75	3,375	3,375	5	3,375	1	1	2	3,375	1
Bulgaria	2,25	2,25	2,25	1	2	2,25	2,25	2	1	1,5	2,25	1	2	2,25	2	2,25
Croatia	3,375	2	2,25	2,25	2,25	2	3,75	2,25	2,5	3,75	2,5	2	1	2	2	3
Cyprus	3,75	1	2,25	2,25	1	1,125	2,5	2,25	2,25	3,75	1	1	1	2,5	3	1
Czechia	5	2,25	2,25	2,25	2,25	3,75	2,25	3,375	3,375	5	3,75	2	1	2,5	3	2
Denmark	4,5	1,5	3,375	3	3,375	3,375	5	3,375	4,5	4,5	2,25	1	1	3	3,375	4
Estonia	3,375	0,75	3,375	5	2	2,25	2,25	3	3,375	3,75	3,375	1,125	1,125	3,375	3,375	2
Finland	4	1	3,375	4	3,375	3,75	5	3,375	5	4,5	4,5	2	1	2	3,375	3,375
France	4	1	3,375	2,25	3,375	2	3,375	2,25	4,5	3	3,375	1	1	1,125	1	2,25
Germany	3	1,125	3,375	2	3,375	3,75	3,375	3,375	3,375	2,25	3,375	1	1	2	3,375	4,5
Greece	2,25	2	2,25	2,25	2	2,25	2,25	1,125	2,5	3,75	2,25	2	1,125	2	2,25	2
Hungary	3,75	0,75	3,375	2	0,75	3,375	2	3,375	2,25	3,375	3,375	2	0,75	2	2	1,125
Iceland	5	1	3,75	2	3,375	1,25	5	2	4	4	1,25	1	1	0,75	3,375	2,25
Ireland	5	2,25	3,375	3,375	2,25	2	3,75	2,25	3,375	3,75	3	0,75	1	2	3	0,75
Italy	2,25	1	3,375	2	2,25	2	3,375	2	2,25	2	3,75	2	1	1	2,25	2
Latvia	2,25	1	2,25	3,375	1,5	2,5	3,75	2,25	2,25	1,5	3,75	0,75	1,5	3,375	3,375	1
Lithuania	3,375	1	2,25	3,375	2,25	2,5	1	2,25	2,25	2,25	3,375	1	0,75	3,375	3,375	2,25
Luxembourg	3	2	3,375	2	2,25	2,25	2	3	3	3	3,375	1	1,125	1	2	1,125
Malta	3,375	0,75	2,25	2,25	1,125	1,125	2,25	3,375	2	2,25	2	2	2,5	1	2	1
Netherlands	4	1	3,375	3	3,375	3,375	2,5	3,375	4,5	3	3,375	1	1	1	2	0,75
Norway	4	2	3,375	3	3,375	2,25	4	2	4,5	5	3,375	0,75	1	1	3,375	4
Poland	5	2	2,25	3,375	2	3,375	2,25	3,375	2,25	5	2,5	2	1	2	2	2
Portugal	3,375	2	3,375	3,375	3,375	2,25	3,375	3,375	2,25	3,75	2,25	1	2	0,75	2	2
Romania	1,25	2	2	1	2	2,25	2	1,125	1,125	2,25	2,25	0,75	2	1	2	2
Slovak Republic	3,75	0,75	3,375	2,25	2,25	3,375	3,375	2,25	1,125	5	2,5	1,5	1	2,25	3	2
Slovenia	5	2	3,375	3,375	2	2,5	3,375	3,375	3	5	2,5	2	1	2	3,375	2
Spain	2	1	3,375	3,375	3,375	3	2,25	2,25	2,25	3,75	3,375	2	1	1	3	2
Sweden	3	2	3,375	3,375	3,375	3,75	4	3,375	4,5	5	3	2	2	1	2	3
Switzerland	3,375	2	4,5	2	3,375	2,25	5	2,25	4,5	2,25	3,375	1	2,25	1	2	1
Türkiye	1	1,5	2,25	1,125	1,125	3,375	1,5	1	2,25	0,75	1,125	3	2,25	0,75	1	3,375
United Kingdom	3	1	2,25	3,375	2,25	3,375	2,25	3	3,375	2	2	2	1,25	2,25	2	1

Source: Own preparation based on Europe Sustainable Development Report 2022.

SDG4 grade evaluates quality of education. The best European country in this area was Switzerland. The worst occurred Romania. Aspects taken into account to evaluate this goal was i.a.:

1. Participation in early childhood education.
2. Early leavers from education and training.
3. National scores in the Programme for International Student Assessment (PISA).
4. Underachievers in science.
5. Variation in science performance explained by students' socioeconomic status.
6. Tertiary educational attainment.
7. Adult participation in learning.

The highest grades form SDG5 (Gender equality) point of view in 2022 was observed for: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland. The lowest grade of SD5 was observed for Cyprus. To evaluate SD5 it was taken into account i.a.:

1. Unadjusted gender pay gap,
2. Gender employment gap,
3. Population inactive due to caring responsibilities,
4. Seats held by women in national parliaments,
5. Positions held by women in senior management positions,
6. Proportion of ICT specialists that are women.

SDG6 describes Clean water and sanitation. The countries that performed best in this aspect were: Czechia, Finland, Germany, Sweden. Cyprus and Malta was on the opposite side. Clean water and sanitation was evaluated by such ratios as i.a.:

1. Population having neither a bath, nor a shower, nor indoor flushing toilet in their household.
2. Population connected to at least secondary wastewater treatment.
3. Freshwater abstraction.
4. Scarce water consumption embodied in imports.
5. Population using safely managed water services.
6. Population using safely managed sanitation services.

The highest grades from SDG7 (Affordable and clean energy) perspective was observed for: Austria, Denmark, Finland, Iceland and Switzerland. The lowest grade has only Lithuania. Affordable and clean energy was evaluated by such ratios as i.a.:

1. Population unable to keep home adequately warm.
2. Share of renewable energy in gross final energy consumption.
3. CO2 emissions from fuel combustion per electricity output.

SDG8 was titled as a "Decent work and economic growth". Austria, Belgium, Czechia, Denmark, Finland, Germany, Hungary, Malta, Netherlands, Poland, Portugal, Slovenia and Sweden that is list of 13 countries with highest grades. The worst score was observed for Türkiye. This goal was described by such ratios as i.a.:

1. Protection of fundamental labour rights.
2. Gross disposable income.
3. Youth not in employment, education or training (NEET).
4. Unemployment Rate.
5. People killed in accidents at work.
6. In work at-risk-of-poverty rate.
7. Fatal work-related accidents embodied in imports.
8. Victims of modern slavery embodied in imports.

From SDG9 (Industry, innovation and infrastructure) perspective the highest grade was observed for Finland. The lowest grade was observed for Bulgaria. Evaluation was based on such ration as i.a.:

1. Gross domestic expenditure on R&D.
2. R&D personnel.
3. Patent applications to the European Patent Office.
4. Households with broadband access.
5. Gap in internet access, urban vs rural areas.
6. Population with at least basic digital skills.
7. Logistics performance index: Quality of trade and transport-related infrastructure.
8. The Times Higher Education Universities Ranking: Average score of top 3 universities.
9. Articles published in academic journals.

The highest grades from SDG10 (Reduced inequalities) perspective was observed for Austria, Belgium, Czechia, Norway, Poland, Slovak Republic, Slovenia and Sweden. The lowest grade was observed for Türkiye. Evaluation was based on Gini Coefficient and Palma ratio.

Best country from "Sustainable cities and communities" (SDG 11) point of view is Finland. Cyprus had the lowest SDG11 grade. Ratios used to evaluate Sustainable cities and communities was:

1. Urban population without access to green urban areas in their neighbourhood.
2. Overcrowding rate among people living with below 60% of median equivalized income.
3. Recycling rate of municipal waste.
4. Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames or floor.
5. Housing cost overburden rate.
6. Exposure to air pollution: PM2.5 in urban areas.

From "Responsible consumption and production" (SDG 12) point of view Türkiye had highest grade (but only 3). The lowest grade (1) was observed for 13 countries: Austria, Belgium, Bulgaria, Cyprus, Denmark, France, Germany, Iceland, Lithuania, Luxemburg, Netherlands, Portugal and Switzerland. This goal was based on ratios like:

1. Circular material use rate.
2. Gross value added in environmental goods and services sector.
3. Production-based SO2 emissions.
4. Imported SO2 emissions.
5. Production-based emissions of reactive nitrogen.
6. Imported emissions of reactive nitrogen.
7. Exports of plastic waste.

Best country form "Climate action" (SDG 13) perspective was Malta. The lowest grade was observed for Hungary and Lithuania. Climate issues in SDG13 was evaluated on the basis of:

1. CO2 emissions from fossil fuel combustion and cement production.
2. CO2 emissions embodied in imports.
3. CO2 emissions embodied in fossil fuel exports.

Life below water (SDG 14) was omitted from the study due to missing data for some countries. Taking into account "Life on land" (SDG 15) best countries in 2022 were: Estonia, Latvia, Lithuania. The worst was Iceland, Portugal and Türkiye. This goal evaluation was based on:

1. Mean area that is protected in terrestrial sites important to biodiversity.
2. Mean area that is protected in freshwater sites important to biodiversity.
3. Biochemical oxygen demand in rivers.
4. Nitrate in groundwater.
5. Red List Index of species survival.
6. Terrestrial and freshwater biodiversity threats embodied in imports.

SDG16 describes "Peace, justice, and strong institutions". The highest grade in this issue was observed for: Belgium, Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Slovenia. The lowest score was observed for France and Türkiye. This goal was described by such ratios as:

1. Death rate due to homicide.
2. Population reporting crime in their area.
3. Gap in population reporting crime in their area, by income.
4. Access to justice.
5. Timeliness of administrative proceedings.
6. Constraints on government power.
7. Corruption Perceptions Index.
8. Unsentenced detainees.
9. Exports of major conventional weapons.
10. Press Freedom Index.

"Partnerships for the goals" (SDG 17) was the last goal in this study. The best country in this matter was Germany. The worst was Ireland and Netherlands. Ratios used to evaluate this goal was:

1. Official development assistance.
2. Shifted profits of multinationals.
3. Corporate Tax Haven Score.
4. Statistical Performance Index.

Above conclusions was concerned one-dimensional approach. It was not possible to chose which country is the best taken into account all 16 goals at the same time. The SMD variable presented as a result of the study made it possible to rank individual countries from the best to the worst country from the point of view of all SDGs included in the study.

Therefore the highest value of SMD was observed for Finland (0,55) (see Figure 2). Second place in SDG ranking in 2022 took Sweden (0,50). Third place was observed for Denmark (0,45). Those three Scandinavian countries are characterized by a relatively better competitive position than other countries.

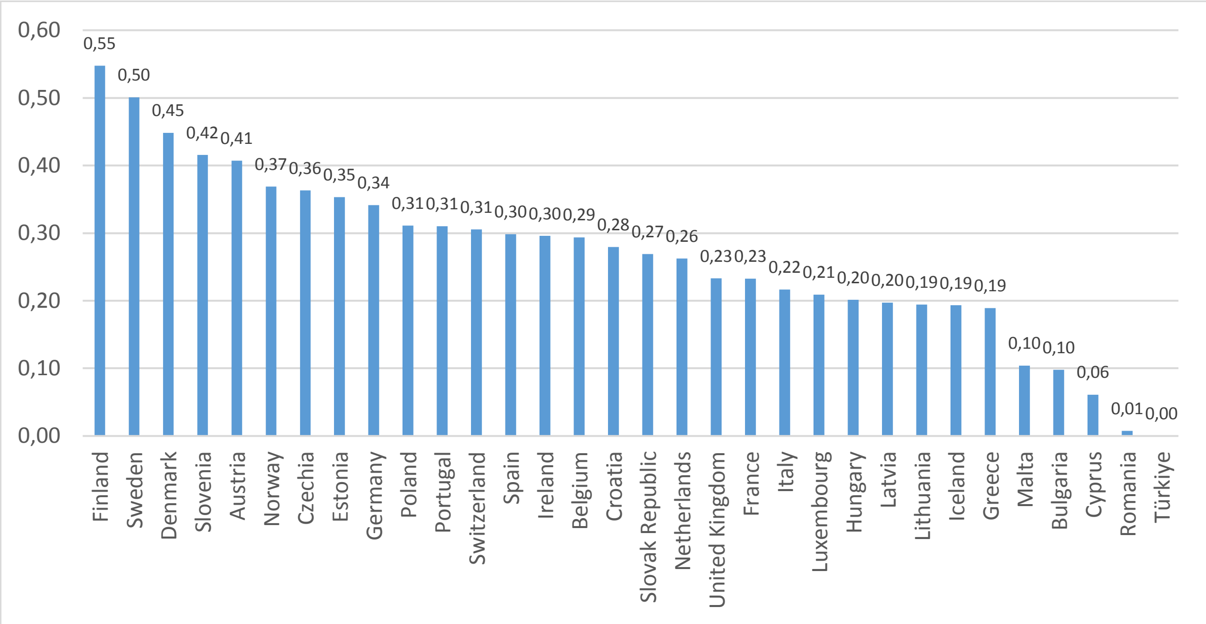

Figure 2. SMD values for chosen European countries in 2022.

Source: Own preparation based on Europe Sustainable Development Report 2022.

A very similar level of relative competitive position was recorded for Slovenia (0,42) and Austria (0,41). Next in the ranking are four countries with a similar score: Norway (0,37), Czechia (0,36), Estonia (0,35) and Germany (0,34). Another group with similar SMD results creates a cluster composed of countries such as: Poland (0,31), Portugal (0,31), Switzerland (0,31), Spain (0,30), Ireland (0,30) and Belgium (0,29). Croatia, Slovak Republic and Netherlands can be considered as another cluster (with SMD form 0,28 to 0,26). United Kingdom and France they matched the result ex aequo with the result at the 0,23 level. A similar situation occurred in the case of Italy (0,22) and Luxemburg (0,21). Subsequently, another cluster with similar SDM values became noticeable. This concerned countries such as: Hungary and Latvia with SMD core 0,20 and Lithuania, Iceland and Greece with score 0,19. Malta and Bulgaria had SMD 0,10. Romania and Türkiye may be considered as countries on the last place in ranking what means that relatively taking into account all 16 SDG those countries were furthest from the positive development pattern consisting of the maximum values of individual SDGs.

5. Conclusions

The aim of the article was to evaluate the competitive position of 32 European countries, based on their performance in achieving the Sustainable Development Goals. Due to data constraints, 16 of the 17 SDGs were eventually included. The conclusions of the analysis turned out to be compelling. On the one hand, the leading multivariate positions were mainly occupied by the Scandinavian countries, not only relatively wealthy but also traditionally associated with a commitment to sustainable development. But on the other hand, it can be seen that some countries perceived as wealthy do not look so well when confronted with sustainability criteria. One example is Switzerland, ranked 12th, which is 2 positions behind Poland. Even more interesting is the position of Luxembourg, which in the sustainability scorecard is ranked only 22nd. An interesting point, which requires further research, is that the first 8 places are occupied by countries with a relatively small population, while the first larger country in terms of population is Germany in 9th place, followed closely by Poland.

Given the challenges faced by countries today, an assessment of the multivariate position of countries, taking into account their achievements in relation to the Sustainable Development Goals, seems to be entirely appropriate, as it provides a picture of the potential of individual countries in relation to their ability to cope with the problems that the international community has defined as key, and has included in the form of the SDGs.

However, it cannot be ruled out that an assessment of the competitiveness of countries or regions based on an analysis of their performance against the SDGs also entails certain limitations and challenges. It is not only that complete and up-to-date data are needed, in the form of a wide range of indicators. For a proper interpretation of the assessment for each country under study, an in-depth knowledge of its specificities, both in the economic, social and environmental dimensions, is also necessary. It may then turn out that the achievements in the field of individual goals result, for example, from the baseline level in a given area or the real possibility of taking specific actions. It may also turn out that, because of a certain specificity, in different countries different problems may be prioritised and it is these that are addressed first.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

FINANCIAL STANDING OF SOCIAL ENTERPRISES ON THE EXAMPLE OF THE KUJAWSKO-POMORSKIE VOIVODESHIP

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Purpose: The main aim of the article is to assess the financial condition of social enterprises as entities influencing regional development. An additional aim is to present the legal basis for the functioning of these entities in Poland, as well as to illustrate their diversity in relation to the analysed group of entities.
Design/methodology/approach: The research methods used in the study include critical analysis of literature, law regulations, and analysis of social enterprises' financial data. The scope of research refers to 25 selected social enterprises operating in the Kujawsko-Pomorskie Voivodeship. The liquidity, profitability, and debt ratios were used and the values of selected descriptive parameters were calculated for each ratio.
Findings: The main balance sheet items of the analysed entities show values that are more characteristic for non-profit organisations than for businesses. As a result, not all indicators commonly used in financial analysis could be used, but this justified the inclusion of two additional ratios used for assessment of non-profit entities. The analysis of the financial situation indicates that the surveyed entities have a high level of liquidity. Half of them could cover their costs for at least one month with the funds they had at the end of the previous financial year. However, the fact that half of the analysed entities do not meet the equity to non-current assets ratio is worrying, as well as the existence of negative equity (fund) in some entities.
Originality/value: Taking into consideration the relatively recent introduction of social enterprise status regulations and the limited information available on the financial standing of such entities in Poland, the article complements the literature by presenting the results of the assessment of social enterprises from the Kujawsko-Pomorskie Voivodeship. In addition, the article contributes to the discussion on how to evaluate social enterprises in Poland.
Keywords: social economy; social enterprise; regional development; Kujawsko-Pomorskie Voivodeship.
Category of the paper: Research paper.

1. Introduction

The introduction of the Social Economy Act in August 2022 was a kind of closure of the ongoing period of social economy development in Poland. Under this Act, legal regulations were introduced concerning, inter alia, the organisation and principles of operation of a social enterprise, the principles of obtaining and losing the status of a social enterprise, or the supervision of these entities. A social enterprise, as a social economy entity, is supposed to conduct activity for the benefit of the local community in the field of social and professional reintegration, creation of jobs for people at risk of social exclusion, and provision of social services, realised in the form of economic activity, public benefit activity, and other activity of a payable nature (Ustawa..., 2022, art. 1-2). The tasks resulting from the Act for social enterprises determine their possible impact on regional development.

The issue of regional development, and more specifically the determinants of regional development, is the subject of many research studies (see, e.g., Korenik, 2003; Tuziak, 2023; Spychała, Spychała, 2022). In the literature, the regional development factors are classified in different ways. Taking into consideration the type of those factors we may divide them into: economic factors (e.g., capital, demand and changes in its structure, business efficiency or the employment rate), social factors (e.g., growth and changes in the structure of consumption, rate and nature of urbanisation, increase in the level of education, increase in activity and popularisation of entrepreneurial behaviour), technical factors (e.g., development of technical and implementation facilities, diversification and improvement of production quality, development of high-tech industry), environmental factors (e.g., development of environmental protection and rationalisation of its resources management, implementation of recycling), political factors (e.g: the nature of the authorities, the scope of their competences or their level of legitimacy by society) (Korenik, 2003, p. 65). Creating new jobs for people at risk of social exclusion in social enterprises and providing them with appropriate reintegration support may be indicated as an element of the economic and social factors of regional development. The provision of social services to local communities is also an important area of activity that determines the potential for social and economic development (Stachowicz, Szewczyk, Wiśniewski, 2023, p. 2). The activity of social enterprises can also influence the level of social capital, which determines the development of the region by affecting, among other things, the scope and effectiveness of network cooperation, as well as the efficiency of public institutions, particularly local and regional authorities (Tuziak, 2023, p. 372). Through activities at the regional level, the social economy thus takes on particular importance in voluntarily bottom-up solving local community problems and supporting regional development activities.

The main aim of the paper is to assess the financial condition of social enterprises as entities influencing regional development. A good (stable) financial condition determines the scope and effectiveness of the tasks undertaken by these entities. The critical issue in evaluating the financial situation in the short term is to maintain an adequate level of liquidity and also to ensure a secure method of financing activities, including an assessment of debt levels and the relationship between the structure of assets and sources of financing. The study analysed the financial situation of 25 entities from the Kujawsko-Pomorskie Voivodeship in the years 2021-2022, which obtained the status of a social enterprise according to the Social Economy Act and which, in the analysed period, had this status based on previously valid legal regulations in at least one of the analysed years.

Entities with social enterprise status must be able to operate in a competitive market economy, hence it is necessary to assess their financial health as they deliver activities in the public sphere. However, it should be taken into account that, apart from the financial result, the achievement of specific social goals is also important, as these entities operate on the borderline between the business sector and the non-profit sector. Therefore, in the analysis carried out, due to the nature of the social enterprise status, in addition to the typical financial ratios used to assess the financial situation of enterprises, the ratios used for assessing public benefit organisations were also applied.

An additional aim of the article is to present the legal basis for the functioning of entities with the status of social enterprise in Poland, and to illustrate the diversity of these entities in terms of legal form and type of activity in relation to the analysed group of entities. The research methods used in the article include a critical analysis of the literature and current legislation, as well as an analysis of financial data from the financial statements of social enterprises. For each of the financial indicators used selected descriptive parameters were calculated.

Given the relatively recent introduction of regulations concerning the status of social enterprise and the little information available on the financial situation of such entities in Poland, the article complements the Polish literature on the subject by presenting the results of an analysis of social enterprises from the Kujawsko-Pomorskie Voivodeship. In the foreign literature, studies can be pointed out on assessing the situation of social enterprises using financial data. For example, E.A.M. Searing, on the basis of panel data, analysed which financial characteristics may indicate resilience to financial deterioration or the ability to recover from a difficult financial situation with respect to small and young social enterprises from the United States (2021). In contrast, S. Guan, S. Tian, and G. Deng analysed the impact of diversification and revenue structure on the financial health of Chinese social enterprises (2021). V. Gelashvili, M. del Mar Camacho-Minano, and M.J. Segovia-Vargas, using indicator analysis, analysed the economic and financial situation of social enterprises operating in Madrid (2020). On the other hand, L. Mook, A. Chan, and D. Kershaw, in a case study analysis, proposed a measure of social return on investment to be used to evaluate a social enterprise (2015). As for Polish publications on the subject of social enterprises, they refer rather to the theoretical background of social economy entities (Kaczocha, Sikora, 2023; Chojnacka, 2019), the benefits of the entities for regional development (Janowski, 2020) or the evaluation of the effectiveness of the use of financial support obtained by social enterprises (Oliński, 2020).

The article is organised into an introduction, sections on the status of the social enterprise, the research methodology, the obtained results of the analysis of the financial situation of selected social enterprises from the area of the Kujawsko-Pomorskie Voivodeship, and the summary.

2. Status of social enterprise in Poland

The legislation on the status of social enterprise is, inter alia, the result of actions taken for many years to develop the social economy in Poland. These actions have also been supported by funding from European Union funds. In particular, they were connected to the Europe 2020 strategy adopted in 2010, which identifies inclusive growth, supporting a high-employment economy that ensures social and territorial cohesion, as key priorities (KPRES, 2014, p. 11). In the 2004-2006 programming period, the development of the social economy was supported under the instrument of the EQUAL Community Initiative Programme, while in the 2007-2013 period, the Operational Programme Human Capital (Pacut, 2010, p. 52). In the next programming period 2014-2020, support for the social economy sector took place both within the Regional Operational Programmes and at the national level, in the Operational Programme Knowledge Education Development, under which the ‘Development of social economy’ activity was implemented (it included, inter alia, start-up loans for entities starting up or operating for up to 12 months and development loans for entities operating for more than 12 months) (Informacja..., 2022, p. 29). During this period, the social enterprise model was implemented and popularised, in which it was possible to conduct paid public benefit activity, other paid activity or economic activity (Stachowicz, Szewczyk, Wiśniewski, 2023, p. 25).

Detailed requirements for a social enterprise were included in the Guidelines of the Minister of Investment and Development on the implementation of projects in the area of social inclusion and poverty reduction using the resources of the European Regional Development Fund for 2014-2020 (hereinafter referred to as CT9 Guidelines). The guidelines were aimed at ensuring compliance of actions undertaken within the framework of thematic objective 9 Promoting social inclusion, combating poverty, and all discrimination (including investment priority 9v entitled Supporting social entrepreneurship and professional integration in social enterprises and the social and solidarity economy to facilitate access to employment) with the National Programme for Combating Poverty and Social Exclusion and the National Programme for the Development of the Social Economy (Informacja..., 2022, pp. 7-8).

According to the Ministerial Guidelines, a social enterprise is a social economy entity that fulfils all of the following conditions (Wytyczne..., 2019, pp. 12-14):

1. it has legal personality and conducts business activity registered in the National Court Register or paid public benefit activity or educational activity or cultural activity within the meaning of the relevant acts;
2. it employs a minimum of 30% of people belonging to at least one of the groups of persons at risk of social exclusion defined in the guidelines and conducts a reintegration process, agreed with them and specified in time, towards these employed persons, aimed at acquiring or regaining professional qualifications or key competences;
3. it does not distribute its profit or balance sheet surplus to its shareholders or employees, but uses it to strengthen the enterprise's potential as non-distributable capital and a specific part for professional and social reintegration;
4. it is democratically managed (the governance or ownership structure of the social enterprise is based on co-management in the case of cooperatives, employee shareholding, or employee participation principles, as defined by the entity in its statutes or other founding document);
5. the average monthly remuneration of all employees, including management staff, does not exceed 3 times the average monthly remuneration in the enterprise sector announced by the President of the Central Statistical Office for the previous year;
6. employs on the basis of an employment contract, cooperative employment contract or civil law contract (excluding persons employed on the basis of civil law contracts who carry out business activities) at least three persons with a working time of at least ¼ full time, and in the case of civil law contracts for a period of not less than 3 months and comprising not less than 120 hours of work in total for all months, maintaining the indicated proportion of employment.

The requirements for social enterprises presented in the CT9 Guidelines have largely impacted the current regulations for social enterprise status, contained in the Social Economy Act enacted on 5 August 2022. The social enterprise status can be obtained by entities such as (Małecka-Łyszczek, Mędrzycki, 2023):

- social cooperatives,
- work cooperatives, including cooperatives of disabled and cooperatives of the blind, and agricultural production cooperatives,
- non-governmental organisations with the exception of political parties, European political parties, trade unions and employers' organisations, professional associations, foundations established by political parties and European political foundations,
- legal persons and organisational units acting on the basis of the regulations on the relation between the State and the Catholic Church in the Republic of Poland, the relation between the State and other churches and religious associations, and on guarantees of freedom of conscience and religion, if their statutory goals include conducting public benefit activity,

- associations of local government units,
- joint-stock companies and limited liability companies, as well as sports clubs being companies operating in accordance with the regulations of the Sports Act of 25 June 2010, which do not operate with a view to making profit and allocate their total income to the pursuit of their statutory objectives, and do not distribute profits among their shareholders and employees,
- entities constituting social economy entities (entities that, based on the regulations of the Act of 27 August 1997 on professional and social rehabilitation and employment of disabled persons or the Act of 13 June 2003 on social employment, organised, respectively, an occupational therapy workshop, established a professional activity workshop or a social integration centre, or run a social integration club).

If these entities carry out paid public benefit activity, as defined in the Act of 24 April 2003 on public benefit activity and voluntary work, or economic activity, as defined in the Act of 6 March 2018 - Entrepreneurs' Law or other activities of a payable nature. In addition, the condition must be met that the State Treasury, a local government unit, a state or local government legal person, or a natural person does not have control over the aforementioned entities within the meaning of Article 4(4) of the Act on Competition and Consumer Protection of 16 February 2007, excluding social cooperatives established by persons referred to in Article 4.2, point 2 of the Act on Social Cooperatives of 27 April 2006 (Ustawa..., 2022, Article 3).

Article 4 of the Social Economy Act explicitly indicates that the activity of a social enterprise is to serve local development by performing at least one of the two indicated objectives covering 1) social and professional reintegration of persons at risk of social exclusion and 2) implementation of social services. A social enterprise that realises the first of the indicated objectives is also supposed to perform the function of creating new jobs for persons at risk of social exclusion in social enterprises. These persons are to represent at least 30% of the total number of employees, are to perform work on the basis of an employment contract or a cooperative employment contract, and each person at risk of social exclusion is to be employed at least 1/2 full time (Ustawa..., 2022, art. 5). It should be emphasised that the regulations of the Social Economy Act define the concept of persons at risk of social exclusion as broadly as possible. In particular, social exclusion includes the lack of or limited opportunities to participate in social, political, cultural, or economic life (Stachowicz, Szewczyk, Wiśniewski, 2023, p. 14).

According to the regulations implemented, a social enterprise should have a consultative and advisory body, and it may not allocate the profit or balance sheet surplus obtained from its paid public benefit activity, economic activity or other activity of a paid nature for distribution among its members, shareholders, and persons employed in it (Ustawa..., 2022, art. 7, art. 9(1)).

The adopted social enterprise regulations are in line with the principles presented in the National Programme for the Development of the Social Economy until 2023, which distinguishes social-economy entities, as recognised by (KPRES, 2019, p. 9):

- the priority of social objectives over economic objectives,
- the priority of providing services to members, employees, or the community over categories of absolute profit,
- autonomous governance and participatory decision-making,
- carrying out activities on a regular basis using economic instruments and bearing economic risks related to these activities.

3. Social enterprises in the Kujawsko-Pomorskie Voivodeship

3.1. Research Methodology

The list of entities that have obtained the status of a social enterprise according to the regulations set out in the Social Economy Act is available on the website containing the Register of Social Assistance Units at: https://rjps.mrips.gov.pl/RJPS/RU/start.do?id_menu=59. For the purpose of this article, a list of 66 enterprises from the Kujawsko-Pomorskie Voivodeship that have obtained social enterprise status as of 31 July 2023 has been downloaded. To obtain financial data for at least two financial years (2021 and 2022), the list of analysed enterprises was limited to those entities from the Register of Social Assistance Units, which at the same time were social enterprises operating under the CT9 guidelines. This list was obtained from the Social Enterprise Database on the website of the Department of Social Economy at: http://www.bazaps.ekonomiaspoleczna.gov.pl/. In this way, a list of 55 social enterprises operating in the Kujawsko-Pomorskie Voivodeship was obtained. Furthermore, entities which gained the status of a social enterprise in 2022 (based on the CT9 guidelines), as well as those whose financial statements were not available through the Financial Documents Repository or the attached files could not be read correctly, were excluded from the analysis.

The procedure used to assess the financial situation resulted in data from 25 entities with the status of a social enterprise. These entities have different legal forms, as presented in Table 1. Among the examined sample, the largest share is held by social cooperatives - 13 entities, and foundations - 8 entities. In total, 45% of all entities operating in the Kujawsko-Pomorskie Voivodeship that had the status of a social enterprise according to the CT9 Guidelines and obtained this status according to the guidelines contained in the Social Economy Act by 31 July 2023 were analysed.

Table 1.
Legal forms of the entities with the status of a social enterprise from the Kujawsko-Pomorskie Voivodeship in the analysed period

Legal form	Number of all entities with the status of social enterprise	Number of examined entities with the status of social enterprise	Share of the examined entities in all social enterprises
Social cooperatives	21	13	61.90%
Foundations	17	8	47.06%
Associations	4	2	50.00%
Non-profit companies (limited liability companies)	13	2	15.38%
Total	55	25	45.45%

Source: own elaboration.

Table 2 presents additional characteristics of the entities analysed, such as the date of registration of their activity, the main business activity, the purpose of their activity as a social enterprise, as well as the period for which the social enterprise status was obtained according to the CT9 Guidelines and the date of obtaining the status based on the Social Economy Act. The analysed entities are characterised by different periods of activity; the oldest entity has been operating since mid-2006, while 7 entities registered their activity as recently as 2020.

The main scope of activity in the analysed group includes: administrative and support service activities (5), health care and social work activities (4), accommodation and food service activities (3), water supply and sewage and waste management and remediation activities (3), professional, scientific and technical activities (3), education (2), arts, entertainment and recreation activities (2), construction (2), information and communication (1). For 12 entities, the purpose of the activity is only the reintegration activity, for 4 the realisation of social services, while the rest of the entities realise both those purposes. Summarising the characteristics of the analysed entities, attention should be paid to their diversity in terms of legal form, type of business activity, and purpose of activity, as well as the period of activity.

Table 2.
Characteristics of the examined entities with the status of a social enterprise from the Kujawsko-Pomorskie Voivodship

No.	Date of business registration	Main business activity	Purpose of activity: Reintegration Activity (RA)/ Realisation of Social Services (RSS)	Status period according to CT9 guidelines	Date of obtaining status under the Social Economy Act
1	2006.05.25	Education	RSS	2021.09.30 2023.03.29	2023.02.13
2	2008.11.04	arts, entertainment and recreation activities	RA; RSS	2022.05.12 2023.11.11	2023.02.22
3	2010.02.08	accommodation and food service activities	RA; RSS	2020.01.20 2023.01.19	2023.02.13
4	2010.02.11	health care and social work activities	RA; RSS	2021.06.01 2022.11.30	2023.02.17

Cont. table 2.

5	2013.12.06	administrative and support service activities	RA	2020.02.21 2023.02.20	2023.03.17
6	2014.06.25	accommodation and food service activities	RA; RSS	2020.02.01 2023.01.31	2023.07.11
7	2016.08.31	education	RA; RSS	2019.04.05 2023.09.22	2023.06.23
8	2017.03.23	construction	RA	2019.07.26 2024.01.26	2023.02.13
9	2017.06.30	administrative and support service activities	RA; RSS	2020.01.18 2023.01.17	2023.04.07
10	2017.07.11	health care and social work activities	RSS	2018.10.19 2023.05.02	2023.02.17
11	2017.10.18	accommodation and food service activities	RA	2021.12.10 2023.06.10	2023.07.20
12	2017.11.24	water supply and sewage and waste management and remediation activities	RA	2020.02.09 2023.02.09	2023.02.20
13	2018.04.26	administrative and support service activities	RA	2020.01.07 2023.01.28	2023.02.13
14	2018.05.10	administrative and support service activities	RA	2019.07.01 2024.04.24	2023.06.06
15	2018.06.15	information and communication	RA	2018.11.05 2023.05.20	2023.05.04
16	2018.07.11	water supply and sewage and waste management and remediation activities	RA	2019.12.11 2024.03.27	2023.07.06
17	2018.07.23	administrative and support service activities	RA	2019.12.11 2024.03.27	2023.07.06
18	2019.10.08	professional, scientific, and technical activities	RSS	2022.05.27 2023.11.26	2023.04.13
19	2020.01.31	health care and social work activities	RA; RSS	2021.09.23 2023.03.22	2023.01.19
20	2020.02.12	arts, entertainment and recreation activities	RSS	2020.09.21 2023.11.02	2023.07.26
21	2020.03.02	water supply and sewage and waste management and remediation activities	RA	2020.06.17 2024.04.09	2023.07.06
22	2020.03.03	health care and social work activities	RA	2020.06.17 2024.04.09	2023.07.06
23	2020.03.19	professional, scientific, and technical activities	RA	2020.07.23 2023.07.22	2023.07.13
24	2020.08.20	professional, scientific, and technical activities	RA; RSS	2020.09.08 2024.04.11	2023.02.03
25	2020.12.30	construction	RA; RSS	2022.04.20 2023.10.19	2023.07.14

Source: own elaboration.

The evaluation of the financial situation was based on financial data obtained from the financial statements. However, it should be noted that the entities use different financial statement templates, which affects the scope of financial data available to be used in the analysis. In the analysed group, the largest number of entities - 12 - presented financial statements in accordance with Appendix No. 6 to the Accounting Act, which is intended for non-governmental organisations, 7 entities, which included mainly social cooperatives used Appendix No. 1, which is characterised by the widest range of financial data, another 4 social cooperatives used Appendix No. 5 for small entities, while two entities used the least extended Appendix No. 4 for micro entities (Table 3).

Table 3.
Template of financial statements used by examined entities with the status of a social enterprise from the Kujawsko-Pomorskie Voivodeship

Legal form	**Template of financial statement according to the annexes to Accounting Act**			
	annex no. 1	**annex no. 4**	**annex no. 5**	**annex no. 6**
Social cooperatives	6	1	4	2
Foundations	0	0	0	8
Associations	0	0	0	2
Non-profit companies (limited liability companies)	1	1	0	0
Total	7	2	4	12

Source: own elaboration.

The conducted analysis used indicators aimed at assessing the financial situation in terms of profitability, maintenance of liquidity, and ways of financing activities. Table 4 presents the financial ratios used in the analysis and how they were calculated in relation to the various financial statement templates from which the financial data was obtained.

Table 4.
Indicators used in the analysis and calculation method depending on the financial statement template

Ratios	**Template of financial statement according to the annexes to Accounting Act**			
	annex no. 1	**annex no. 4**	**annex no. 5**	**annex no. 6**
Return on total revenue ROS	net profit (loss)/ (net sales revenue + other operating income + financial income)	net profit (loss)/ (core operating revenues + other income and profits)	net profit (loss)/ (net sales revenue + other operating income + financial income)	net profit (loss)/ (revenue from statutory activities + revenue from business activities + other operating income + financial income)
Return on assets ROA	net profit (loss)/ total assets	net profit (loss)/ total assets	net profit (loss)/ total assets	net profit (loss)/ total assets
Return on equity ROE	net profit (loss)/ equity	net profit (loss)/ equity	net profit (loss)/ equity	net profit (loss)/ own fund
Current ratio	current assets/ short-term liabilities	current assets/ (liabilities and provisions for liabilities – provisions for liabilities)	current assets/ short-term liabilities	current assets/ short-term liabilities
Quick ratio	(current assets – inventory)/ short-term liabilities	(current assets – inventory)/ (liabilities and provisions for liabilities – provisions for liabilities)	(current assets – inventory)/ short-term liabilities	(current assets – inventory)/ short-term liabilities

Cont. table 4.

Cash ratio	current investments/ short-term liabilities	current investments/ (liabilities and provisions for liabilities – provisions for liabilities)	current investments/ short-term liabilities	current investments/ short-term liabilities
Stability ratio	current investments$_t$*365/ total costs$_{t+1}$	current investments$_t$ *365/ total costs$_{t+1}$	current investments$_t$ *365/ total costs$_{t+1}$	current investments$_t$*365/ total costs$_{t+1}$
Debt ratio	liabilities and provisions for liabilities / total assets	liabilities and provisions for liabilities / total assets	liabilities and provisions for liabilities / total assets	liabilities and provisions for liabilities / total assets
Non-current asset financing ratio	equity/ non-current assets	equity/ non-current assets	equity/ non-current assets	own fund/ non-current assets
Equity ratio	equity/ total income	equity/ total income	equity/ total income	equity/ total income

Source: own elaboration on the basis: (Gelashvili, Camacho-Miñano, Segovia-Vargas, 2020; Chojnacka-Pelowska, Górecka, 2023; Chang, Tuckman, 1991).

For every indicator, the value of the arithmetic mean and median was presented, as well as other descriptive statistics that illustrate the distribution of the indicator under study and its variability, such as maximum value, minimum value, upper and lower quartiles, and skewness, were calculated. A limitation in conducting financial analysis among social enterprises is the fact that there are levels of selected balance sheet items that are more characteristic of non-profit organisations than of entities carrying out business activities. This is illustrated in the next two tables (Tables 5 and 6), which contain characteristics of such balance sheet items as non-current assets, current assets, short-term investments, equity (fund), net financial result, liabilities and provisions for liabilities and short-term liabilities.

Table 5.

Descriptive parameters of selected assets balance sheet items in the examined social enterprises from the Kujawsko-Pomorskie Voivodship (in thousand PLN)

Description	Non-current assets		Current assets		Short-term investment	
	2021	2022	2021	2022	2021	2022
Maximum	700.01	4 059.01	2 916.25	4 833.36	1 963.58	3 529.55
Upper quartile	137.95	145.41	214.83	395.31	201.13	166.08
Median	55.62	70.15	102.39	74.09	67.70	46.86
Lower quartile	35.33	40.57	65.43	42.57	15.56	27.31
Minimum	0.00	0.00	0.10	12.08	0.02	6.84
Mean	119.24	289.52	335.92	413.14	214.06	274.49
CV (in %)	139.73	277.33	184.28	233.57	195.90	258.25

Source: own elaboration.

Table 6.
Descriptive parameters of selected equity and liabilities balance sheet items in the examined social enterprises from the Kujawsko-Pomorskie Voivodship (in thousand PLN)

Description	Equity (own fund)		Net financial result		Liabilities and provisions for liabilities		Short-term liabilities	
	2021	2022	2021	2022	2021	2022	2021	2022
Maximum	933.13	1 619.29	680.99	998.93	2 457.29	3 980.86	1 343.79	1 134.03
Upper quartile	166.03	197.48	89.18	62.00	286.95	307.39	215.12	181.16
Median	71.92	55.25	19.85	22.16	108.53	103.27	31.40	50.98
Lower quartile	7.28	29.41	2.38	-13.56	33.88	47.71	8.99	10.77
Minimum	-193.56	-108.64	-63.41	-97.32	0.00	2.07	0.00	0.75
Mean	145.74	211.98	81.95	64.10	306. 01	490.68	164.76	159.59
CV (in %)	176.58	185.47	188.27	332.78	172.25	211.11	172.31	162.67

Source: own elaboration.

The values presented for each statistical measure of selected balance sheet items confirm both the large diversity of the analysed financial data among the analysed entities in a single year and the significant changes in these values between years. It is worth noting that 5 entities in 2021, and 3 entities in 2022 had no non-current assets. In the years studied, 19 entities had no inventories, while all the social enterprises analysed had no provisions for liabilities. Due to some specific level of selected balance sheet items, the following assumptions were additionally made in the analysis carried out:

- each ratio was calculated for a group of the same entities in 2021 and 2022 (an entity for whom ratio could not be calculated in one of the analysed years was also excluded from the calculation for the other period),
- observations for which the indicator could not be correctly interpreted or could not be calculated because the value of the denominator was zero were excluded from the calculations,
- data for entities with negative equity (fund) for the calculation of the return on equity (fund) ratio, debt ratio, asset financing ratio and equity (fund) ratio were not included.

As a consequence of these assumptions, the number of observations used to calculate statistical measures for each ratio is less than 25 (the exact number of observations is given in the tables).

3.2. Results

Table 7 presents the results of the financial analysis in terms of the liquidity assessment carried out on the basis of three ratios examining liquidity in static perspective (current ratio, quick ratio and cash ratio). Additionally, the financial stability ratio was used in this aspect of the analysis, by means of which it is measured how long the short-term investments held at the end of the previous financial year, i.e. the assets with the highest degree of liquidity, comprising mainly cash and cash equivalents, will last for the new financial year. The results obtained using the financial stability ratio are presented as the number of days that the short-term investments held are sufficient to finance the costs of the business, assuming that most of the costs are the same as the cash outflow (Dyczkowski, 2015b, pp. 152-153). This is one of several indicators used to assess the economic efficiency of a non-profit/ public benefit organisation's operations (Dyczkowski, 2015a).

Table 7.
Selected descriptive statistics of the liquidity ratios in analysed social enterprises from the Kujawsko-Pomorskie Voivodship

Description	Current ratio		Quick ratio		Cash ratio		Stability ratio
	2021	2022	2021	2022	2021	2022	2022
No. of observations	24	24	24	24	24	24	24
Maximum	48.12	77.09	48.12	77.09	45.05	70.61	205 days
Upper quartile	6.56	4.55	6.56	4.52	5.50	3.12	66 days
Median	2.26	2.26	2.24	2.22	1.50	1.33	30 days
Lower quartile	1.25	1.10	1.25	1.10	0.57	0.53	4 days
Minimum	0.02	0.37	0.02	0.37	0.00	0.16	0 days
Mean	5.75	9.44	5.74	9.44	4.48	6.86	50 days
Skewness	3.77	2.76	3.77	2.77	3.93	3.29	1.40

Source: own elaboration.

In the analysed group of social enterprises, the average value of liquidity ratios is high, and the value of these ratios increases in 2022 compared to the previous year. The results obtained for the current liquidity ratio and the quick liquidity ratio for both years analysed are very similar, which is the result of the fact that most of the analysed entities did not have inventories. In 2022, on average, the value of current assets held exceeded the value of current liabilities by more than nine times, while short-term investments exceeded the value of current liabilities by more than six times. The average values are also significantly higher than the median; hence it implies that liquidity ratios are below average for most entities. In 2022, half of the analysed entities had a cash ratio of more than 1.33. A positive skewness ratio for all years and ratios analysed indicates right-handed asymmetry.

The results obtained may in fact indicate significant over liquidity occurring among the analysed entities, however, they are mainly related to the low level or lack of short-term liabilities in the analysed social enterprises. Therefore, in the author's opinion, it is worth using the proposed financial stability indicator for the analysis, which, due to its construction, omits the limitation indicated above. As data from the previous period are also used to calculate the indicator for a given year, the results obtained apply only to 2022. Short-term investments held at the end of 2021 would on average be sufficient for 50 days of activity in 2022 (assuming that all costs of 2022 would involve a cash outflow). In ¼ of the entities, this was only sufficient for 4 days of activity, while in half it was sufficient for more than 30 days.

Table 8 provides the results obtained for selected profitability ratios in the analysed entities.

Table 8.
Selected descriptive statistics of profitability ratios in analysed social enterprises from the Kujawsko-Pomorskie Voivodship

Description	ROS		ROA		ROE	
	2021	2022	2021	2022	2021	2022
No. of observations	24	24	24	24	20	20
Maximum	36.55%	17.98%	63.99%	87.38%	118.45%	93.71%
Upper quartile	7.53%	8.35%	17.87%	23.63%	73.27%	75.83%
Median	3.27%	4.62%	10.65%	17.67%	45.30%	33.67%
Lower quartile	0.42%	-1.06%	3.32%	0.95%	18.17%	9.43%
Minimum	-14.65%	-22.98%	-104.15%	-74.28%	-241.92%	-134.68%
Mean	6.30%	2.05%	9.66%	13.19%	33.95%	28.10%
Skewness	1.03	-1.16	-1.72	-0.37	-2.69	-1.29

Source: own elaboration.

The profitability analysis was limited to the three most frequently used ratios of return on assets (ROA), return on equity (ROE), and return on revenue (ROS). However, given that the financial statements of the analysed entities were presented in accordance with various annexes to the Accounting Act, in order to ensure the highest possible comparability of data, the author decided to calculate the ROS ratio taking into account the value of net result and the total value of revenue. Due to the low value of financial income and financial expenses in the analysed entities, it can also be assumed that the ROS ratio calculated in this way is a good approximation of operating profitability. In the considered period, the mean and median values of the analysed profitability ratios were at different levels. The average profitability of total revenues in 2022 decreased by 4.25 percentage points compared to 2021, but half of the analysed entities improved the profitability of total revenues in 2022 compared to the previous year. The arithmetic mean for ROE was at a similar level in the years studied, but half of the analysed entities achieved a lower ROE in 2022 compared to 2021. The considerable differences in the calculated values of ROA, ROE, and ROS ratios in the years under study result, among other things, from the high variability of the financial result, which is heavily dependent on the subsidies obtained or the instruments intended for social enterprises to support their business purposes. In addition, the analysed entities often have low and/ or significantly changing values of the main balance sheet items, which are used to calculate profitability ratios.

Table 9 shows the results of the analysis carried out in terms of the selected business financing ratios in the social enterprises. The analysis was based on the general debt ratio, which informs about the extent to which assets are financed by liabilities, as well as a ratio illustrating the so-called golden balance sheet rule, according to which non-current assets should be financed by a stable source of financing, such as equity (own fund). From the literature concerning the financial analysis of non-profit organisations, an additional equity (own fund) ratio has been adopted. It was calculated as the relation of equity (own fund) to total revenue. The reason for this is that in the event of a periodic lack of revenue, the entity can use its net assets (corresponding in value to equity) to finance its activities. A larger proportion of equity (own fund) in relation to total revenue provides greater security in that the corresponding net assets are more likely to replace revenue in times of financial distress (Chang, Tuckman, 1991, p. 660).

Table 9.
Selected descriptive statistics of business financing ratios in analysed social enterprises from the Kujawsko-Pomorskie Voivodship

Description	Debt ratio		Non-current asset financing ratio		Equity ratio	
	2021	2022	2021	2022	2021	2022
No. of observations	20	20	18	18	21	21
Maximum	96.97%	87.66%	26.41	63.14	0.65	0.81
Upper quartile	83.40%	70.67%	2.64	2.18	0.22	0.19
Median	59.56%	54.03%	1.37	0.73	0.09	0.15
Lower quartile	29.86%	29.80%	0.52	0.60	0.04	0.08
Minimum	0.00%	2.79%	0.06	0.18	0.02	0.04
Mean	54.52%	51.01%	2.83	4.68	0.17	0.21
Skewness	-0.40	-0.36	3.98	4.20	1.57	2.03

Source: own elaboration.

The values of the arithmetic mean and median indicate that, over the period studied, the analysed social enterprises reduced the share of liabilities in asset financing. In 2022, on average, they financed their assets with liabilities of around 51%, while ¼ of the entities had debts of more than 70% of assets. As for the non-current asset financing ratio, the value obtained for the arithmetic mean indicates a very secure way of financing non-current assets - in 2022 equity is more than 4 times higher than non-current assets. Nevertheless, the positive skewness suggests that for the majority of entities the non-current asset financing ratio reaches values below the average. Considering the median, it turns out that in 2022, half of the analysed entities had this ratio below 1, which means that the principle of secure financing of non-current assets was not met, as the non-current assets were also partly financed by liabilities.

The results obtained for the equity (own fund) ratio may indicate that more of the analysed social enterprises were better secured in 2022 compared to 2021. In 2022, equity (own fund) represented on average 21% of total revenues (compared to 17% in 2021), while in half of the analysed entities it was at least 15% (compared to 9% in 2021).

4. Summary

The aim of the article was to assess the financial standing of social enterprises from the Kujawsko-Pomorskie Voivodeship as entities influencing regional development through the tasks they perform, such as: social and professional reintegration of people at risk of social exclusion and the delivery of social services. A good and stable financial situation determines the scope and effectiveness of the tasks undertaken by these entities.

The study identified significant problems in carrying out the analysis which included the great diversity of entities with the status of social enterprise both in terms of legal form, scope of activity, and scope of financial data. Furthermore, the limited number of entities analysed was also due to the unavailability of financial statements in the Financial Document Repository or the submission of incomplete files.

The next problem in assessing the financial situation of entities with social enterprise status arises from the purpose of their operation. On the one hand, these entities are supposed to achieve selected social goals, but on the other hand, they are not typical non-profit entities, so taking into account in the assessment of their financial condition the typical indicators used to assess profit-orientated entities seems reasonable. It turned out that selected balance sheet items of the analysed entities have values that are more characteristic of non-profit organisations than of entities running a business. This meant that not all ratios commonly used in financial analysis could be used, and also justified the use of two additional ratios used to assess non-profit entities.

An assessment of the financial situation of the selected social enterprises from the Kujawsko-Pomorskie Voivodeship, conducted on the basis of financial ratios, indicates that they have a high level of liquidity. Half of the analysed entities could cover their costs for at least one month using funds held at the end of the previous financial year. A certain level of security is also confirmed by the increasing level of the equity (own fund) ratio. The net asset value, which represents equity (own fund), provides a higher level of security in 2022 in the event of periodic revenue shortfalls. However, the fact that principle of secure financing of non-current assets by equity was not met in half of the entities, as well as the existence of negative equity (own fund) in some entities is worrying.

The considerable difficulty lies in assessing the profitability of social enterprises. It seems that these entities should show positive profitability, still, taking into account the purpose of their activities, high profitability should not be expected. Among the analysed entities the number of entities that show a negative financial result increased in 2022. In addition, the respective values of such items as equity or total assets in these entities cause great problems in the correct assessment of the results obtained.

An undoubted limitation of the study is the small number of entities involved in the research and the short research period. Taking this into account, and also the fact that entities with social enterprise status obtained under the Social Economy Act are in the early stages of their activities, it seems necessary to continue research in the future. The future studies should focus both on developing methods for assessing the financial situation of these entities or monitoring their performance in the context of financial independence and methods of financing social economy initiatives.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

SERVICE QUALITY AND CUSTOMER RELATIONSHIP MANAGEMENT IN THE LOGISTICS INDUSTRY

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Purpose: The aim of this article is to present a modern approach to optimising service quality management and customer relationship building in the logistics industry. The text addresses issues related to the ability of logistics systems to meet the expectations of customers in terms of the reliability and timing of deliveries, marketing communication with customers and the convenience of purchasing logistics services. These issues are important for transportation company managers because a thorough knowledge of customers' preferences and behaviours as well as industry trends should be the starting point for developing and implementing a customer service strategy.
Design/methodology/approach: The paper is based on a review of the literature and internet sources. The analyses conducted cover the years 2000-2023.
Findings: The article discusses selected elements included in the process of customer service management in logistics companies. Customer service was broadly defined as the adopted concept of business activity which serves the formation of long-term relationships with customers. Special attention was paid to such attributes of customer service as delivery reliability, responsiveness to market needs, and staff empathy.
Research limitations/implications: It would undoubtedly be advisable to carry out representative surveys among both actual and potential customers of logistics operators in the future to empirically verify the importance of selected elements of the logistics service offered to customers in improving the competitive position of companies and their market success. Among others, the Servqual method for measuring customer satisfaction described in this article can be used for this purpose.
Practical implications: Effective customer relationship management is essential for the managers of logistics companies. The paper discusses selected elements of logistical and transactional customer service, including the indicators and metrics used for evaluating contractors operating in the TSL industry.
Originality/value: The findings of the analyses have cognitive value. The article describes the role of customer service in increasing the competitiveness of companies operating in the logistics sector.
Keywords: Logistics customer service, logistics.
Category of the paper: General review.

1. Introduction

Quality is one of the most important attributes that determine the extent to which a product or service is worth its price and customers' attention. It is a concept that has accompanied mankind since the dawn of time. It is assumed that the concept of quality was invented by Plato (427÷347 BC), who called it *poiotes*. Already in ancient times efforts were made to establish technical standards relating to the quality of goods. The earliest references, concerning the quality of linen cloth come from Egypt before 2000 BC. Around 1200 BC, during the reign of Ramses III, so-called commodity lists containing the requirements that goods should meet were compiled.

In the literature, the following division of the characteristics of quality into four groups can be found (Jazdon, 2002):

1. Technical features (geometrical dimensions, surface condition, physico-chemical properties, parameters relating to the product's function such as speed, efficiency, power, etc., depending on the intended use of the product);
2. Performance features (reliability, durability, safety, serviceability, accessibility, ergonomics, etc.);
3. Aesthetic features (external appearance, proportions, colour, conformity to fashion trends, workmanship, etc.);
4. Economic features (social cost of production, operating costs, etc.).

As regards services, an excellent classification of the basic criteria for assessing their quality has been proposed by A. Parasurman, V.A. Zeithaml and L.L. Berry. This classification includes the following (Jazdon, 2022):

- accessibility of the service, understood as the convenience of the location of service facilities, the most suitable opening times, as well as short waiting times;
- competence and courtesy of staff;
- information about the services offered, which should be precise, transparent and understandable;
- trust and reliability: the service company and its employees should be reliable as regards looking after the interests of its clients, and the service should be provided accurately and conscientiously;
- safety: in the process of providing a service, any risks both for the service provider and the contractor are eliminated;
- accountability: it is the duty of a service provider to act efficiently and competently, taking into account customers' preferences and requirements;
- infrastructure: the material environment in which the services are provided that ensures adequate and professional service provision;
- awareness of the needs of current and prospective customers.

It is worth noting that the above proposal regarding the classification of the criteria for assessing service quality should not be regarded as final. In each case, an individual set of criteria can be developed for a specific service, e.g. logistics, taking into account its specific and characteristic attributes.

2. Logistical and transactional customer service

Customer service is not uniformly understood and has a number of definitions. This is because it may be viewed differently by suppliers, sellers and manufacturers, and differently still by customers. Marketing and logistics professionals may also have different approaches to understanding customer service. From a logistics perspective, customer service is the ability or capacity to meet customer requirements, primarily in terms of the time and place of requested deliveries, using all the available forms of logistics activity, namely transport, storage, inventory management, information and packaging. Marketing experts, on the other hand, see it as something that the company provides in addition to the purchase, thus providing additional benefits for customers. Here, service is perceived as an element of the extended product that creates additional value for the buyer, differentiating the company's offering from that of its competitors. Despite the differences in defining and interpreting customer service, it can be said that the common element in all the definitions is the relationship that occurs between the seller and the buyer during the sales process. Customer service can therefore be understood as a set of activities in which both the seller and the customer participate (Petrykowska, 2009).

Customer service is not clearly understood and there are many definitions of this concept (Ciechomski, Strojny, 2022a). Despite appearances, it represents a very complex process. Dynamic and turbulent markets require quick reactions and a reorganisation or change of the processes that are implemented and applied in a given enterprise.

In logistics, customer service is defined as the ability of the logistics system to come up to customer expectations in terms of time, certainty, communication and convenience. In other words, this concept should be understood as a specific approach to relationship formation, as well as a set of values within the company to which integrated marketing processes should be subordinated. In professionally implemented logistics customer service, the needs of the customers are of paramount importance to the service company. Furthermore, flexibility in customer service means the ability of the logistics system to respond efficiently to non-standard orders (Baker, 2006).

Customer service is an important carrier of the value offered to customers and it should equate with the following (Kuraś, 2013):

- an established business concept that serves to shape customer relationships;
- a system of direct and indirect contacts with the customer;
- a set of established functions and activities within a company;
- a set of decisions that determine the utility of the place as well as the time of purchasing a product;
- a system of flowing streams not only of goods, but also of information and capital;
- part of the distribution system;
- integrated marketing and logistics processes.

Thus, it should be assumed that customer service is a process that takes place on many levels, consisting not only of customer satisfaction, but also of the company's actions that contribute to it.

When managing the customer service process, the primary focus should be on the needs of buyers (Sulkowski, Morawski, 2014). Hence, it is very important to implement in every company service standards that will cover all the levels and areas of the company's operations. It is crucial to meet customers' needs as well as adapting to their requirements. Such an approach contributes to the formation of a strong bond between the customer and the company. Among the many customer service standards, those related to the issues listed below need to be developed and clearly communicated to the service staff:

- guaranteeing the customer that they are buying an undamaged, working product;
- returns or exchanges are possible;
- access to information about the product, its price and features (Olhager, 2012);
- after-sales services such as warranty, installation, transport etc. (Ciechomski, 2010);
- loyalty programmes (e.g. collecting points for purchases, mobile applications);
- interpersonal service (e.g. speaking the language of benefits, smiling, kindness);
- the staff recommending to customers products and services currently being promoted;
- standardised staff uniforms;
- standardised point of sale design;
- a unified product and service offering at all points of sale in a given chain.

The transport, shipment and logistics services provided by companies mean that customers demand a high level of performance from logistics operators regarding four key parameters:

- high quality of services;
- extensive range of services;
- efficient customer service;
- low prices (Rosa, 2006).

Furthermore, customer relationship management is extremely important in the logistics sector as it allows companies to build positive relationships, which leads to increased loyalty and higher sales volumes. According to research, a company that increases customer satisfaction by 5% can increase its sales by 25-95% (Skorupska, 2021). The key to building lasting relationships is ensuring excellent service to customers, which includes providing quick and effective responses to their queries or complaints as well as offering them valuable knowledge and advice.

G. Biesok believes that the management of the customer service process cannot be analysed solely in the dimension of customer relationship. According to the researcher, this process consists of the entirety of activities in a company, in particular the following (Biesok, 2019):

- focusing on the needs of the external customer;
- striving to utilise human resources as well as meeting the needs of the internal customer, i.e. attention must also be paid to staff teams;
- reducing unnecessary hierarchical levels;
- simplifying processes as well as making organisational structures more flexible;
- ensuring not only self-monitoring, but also paying attention to incentive systems;
- highlighting the significant role of supervisors in the company culture;
- caring for the environment and stakeholder relations.

It should be pointed out that, according to G. Biesok, customer service management is a multifaceted process that covers all areas of a company's operations. Moreover, the quality of the services provided, including their reliability, comprehensiveness and timeliness, is increasingly becoming one of the most important elements determining a company's advantage on the market. If a business wants to be active on the market, it has to ensure that the services that it offers, e.g. logistics, represent an acceptable level of quality, defined by the requirements of its customers (Oniszczuk-Jarząbek, 2017).

A. Bajdak, on the other hand, highlights the role of customer service in conducting marketing activities. He notes that customer service involves maintaining relationships with customers not only before the sale and during the transaction, but also after the sale. According to this author, after-sales customer service is becoming an increasingly important tool in attracting or retaining loyal customers (Bajdak, 2003).

A different approach is presented by P. Cheverton, who considers customer service to be a key determinant of the brand prestige of a commercial organisation. According to this author, adjusting the type of interaction with customers to their preferences, needs and expectations is a key factor in brand formation (Cheverton, 2002). This author takes the view that the sum total of customer interactions determines the level of service and customer satisfaction. The more satisfactory and meaningful the overall customer experience is, the greater the brand value becomes.

As a recap of the discussion of logistical and transactional customer service, it is worth noting some examples of factors that can reduce and improve the quality of this service:

a) factors that reduce the quality of customer service;
   - poor or no communication within the company and with customers;
   - failure to comply with the terms of the contract;
   - faults and latent defects in the product or service;
   - increased number of complaints;
   - unpleasant atmosphere in the company;
   - negative opinions about the company;
   - inadequate company management.
b) factors that improve the quality of customer service:
   - an increase in customers' business, which enables the provision of a comprehensive service;
   - customer satisfaction and loyalty;
   - designing the quality system according to the needs of the customers rather than the needs of the company and its sales staff;
   - employee loyalty and identification with the company providing the service;
   - an internally consistent system for monitoring the quality of customer service;
   - updating service quality standards;
   - linking service quality to staff remuneration and motivation system;
   - training for all groups of employees, not just those dealing directly with customers.

Analysing the above factors, it is clear that companies should have a monitoring system in place that will identify any elements in need of improvement. This is a prerequisite for both a successful implementation of quality standards as well as for taking any necessary corrective action.

3. Indicators and metrics used in logistics customer service

A metric is an economic and logistical category that is expressed in appropriate units of measurement. It reflects economic facts and events in the company and its environment. Metrics are usually used in the decision-making process. They are used with regard to natural, techno-economic or value measures, which measure quantitative phenomena and events. They are denominate numbers, relating to a reference base, which are used to assess quantitative phenomena. The old maxim on efficient management says that "if you can't measure it, you can't manage it". It is therefore necessary to first define precisely what is to be measured and the reasons for measuring it.

An indicator, in turn, is a tool that is used to compare and evaluate certain values or processes. It can be an absolute number, a percentage, a ratio or any other parameter that indicates a certain state or trend. Indicators are commonly used in various fields such as economics, finance, statistics, marketing, logistics and many others. Indicators are used for assessing performance, monitoring changes, identifying trends and, most importantly, managerial decision-making. It is also worth noting that in everyday language the two terms are very often used interchangeably, though such a use is sometimes erroneous as it equates two different categories.

Referring to the metrics and indicators used in logistics customer service, M. Jakubczyk emphasises that there are three areas of their application (Jakubczyk, 2023). These include the evaluation of the standard of service, i.e. they make it possible to measure on the one hand employee performance and, on the other hand, customer satisfaction. The first area is service performance and quality indicators. These refer to interactions with customers, as customers expect not only easy but, above all, fast contact. The indicators implemented in this sphere of a company's activity include the following:

- Service Level (SLV), an indicator of operational performance, for example in a contact centre. It refers to the percentage of calls answered in a specific period of time;
- First contact resolution rate (FCR), which relates directly to the outcome of a customer's contact with the company and denotes the percentage of cases that are resolved during a customer's first contact with the company;
- Call abandonment rate, which shows how many calls were abandoned by customers before being connected with an agent;
- Average time on hold, which refers to the average time a customer is made to wait on hold, for example when the staff are consulting on a problem with their superiors.

The second area is team and consultant performance measures. This primarily concerns efficiency, service quality and customer service. Key features here are the efficiency, quality and reliability of customer service:

- Call Scoring, i.e. the monitoring of interactions between the customer service department and customers. The following aspects are assessed: firstly, the contact practices adopted in the organisation; secondly, the factual correctness of the information provided; and thirdly, the optimal forms of communication;
- Agent turnover rate, which relates to the employee turnover indicators in a company.

The third area relates to customer experience. This indicator is crucial, as it reflects not only the strategy, but above all the technologies implemented in the customer service process. The most important metric in this area refers to the subjective perception of communication, and it is this metric that determines the final score given for logistics customer service. In this area, the following are indicated:

– Customer Satisfaction (CSI) is used to determine the level of customer satisfaction not only with the products but also with the services offered by the company;
– Net Promote Score (NPS), which refers to the measurement of customer loyalty.

In conclusion, there are a number of indicators and metrics available for assessing logistics customer service. It is crucial to point out that each logistics company can tailor a given set of metrics and indicators to its needs and prevailing industry standards.

4. The Servqual method of measuring customer satisfaction with service quality

An interesting aspect of analyses devoted to assessing the level of logistics customer service is the use of the Servqual method. This is a method of measuring customer satisfaction which originated in the United States and was developed by A. Parasuraman, V. Zeithaml and L. Barry (Sidor, 2000). This instrument is based on a standardised questionnaire as a measurement tool. It consists of 22 statements divided into five areas (Wozniak, 2017). The first area refers to the so-called tangibles of customer service. Here, attention is directed to the following elements:

– the company's ownership of modern equipment;
– the dress code and the aesthetic appearance of the company's employees;
– a visually appealing physical environment for the company;
– the visual attractiveness of the materials that relate to the service provided.

The second area is reliability, which includes the following categories:

– keeping a promise, i.e. the company promises to provide a particular service and does so;
– keeping to the schedule, i.e. the company provides the service within the promised time;
– correct performance of the service by the company from the very first contract;
– providing comprehensive solutions to actual and potential customer problems, based on a full understanding of their needs;
– keeping accurate and up-to-date records.

Area three is empathy. In this area of logistics customer service evaluation, attention is focused on the following elements:

– the company ensures individualised treatment of each client;
– the company's staff devote appropriate attention to customers;
– the company's operation hours are convenient for all its customers;
– the interests of its clients are the company's primary objective;
– the company's employees understand the specific needs of their clients.

The fourth area is assurance, which includes the following parameters:
- the behaviour of the company's employees, which, above all, should inspire confidence;
- customers should feel secure when dealing with the company;
- the company's staff must always be courteous towards their customers;
- the company's employees must have up-to-date knowledge to be able to provide specific answers.

The final, fifth area is responsiveness. The key issues in this area include the following:
- the company employees are always ready to assist their customers;
- the staff never ignore customer enquiries or attempts to contact the company;
- the company's employees are obliged to inform their clients of the precise date on which the service will be provided;
- the company's staff ensure that customers receive prompt service.

The statements in each area are rated by respondents; usually on a seven-point Likert scale where '1' means '*completely disagree*' and '7' means '*completely agree*' (Wolniak, Skotnicka, 2009; Woźniak, 2017). The most important element of the Servqual method is the aforementioned survey for assessing the relevance of service quality dimensions. In conclusion, it should be pointed out that the Servqual method is one of the most accurate methods for measuring customer satisfaction with the service received compared to the service that was expected.

5. The importance of service quality in customer acquisition and retention

The liberalisation of markets, the dynamic development of ICT, as well as quick and easy access to information contribute to the emergence of many difficulties in terms of maintaining a competitive advantage in the logistics services market. Therefore, companies are increasingly focusing on exploring and analysing sources that could contribute to maintaining their market leadership (Szymanik, 2016). Customer retention is related to the quality of service that customers receive, and it is measured by their level of satisfaction with the degree to which their needs are met. Three areas are of key importance here (Kramarz, 2014):
- the quality of service, which is understood as the degree to which the specified parameters are met, which in turn must comply with general service standards;
- customer satisfaction, i.e. the customer should be satisfied with the service offered, which must, above all, meet their expectations and preferences;
- customer loyalty, i.e. the company should make every effort for the sake of the customer so that the customer will want to maintain further cooperation in the future and, above all, will not be tempted to use the services of competitors.

M. Giemza is of the opinion that quality should be regarded as a fundamental element in creating lasting relationships between an organisation and its customers. In practice, this means that when creating a customer relationship management system, a company must not only correctly understand the concept of quality but, most importantly, it must realise its value for customers (Giemza, 2006).

In turn, when analysing the role of service quality in gaining and maintaining customers, M. Kadłubek points to the 7R principle, which broadly covers such variables as service quality, customer acquisition and customer retention (Kadłubek, 2012). The 7R rule stands for offering the right product, to the right customer, in the right quantity, at the right price, at the right time, in the right place and at the right cost.

6. Conclusions

In logistics companies effective customer relationship management is crucial for maintaining their competitiveness. To achieve success, such companies use a variety of methods to help customise their offering and improve the quality of service. One of the most important service strategies is personalisation, which involves tailoring the offering to individual customer needs. To achieve this, companies use various techniques such as product recommendations based on previous purchases or dedicated promotions. This provides customers with a more effective and attractive offering, leading to increased repeat purchases and greater customer satisfaction.

Finally, it is also important to mention automation, which allows companies to quickly and efficiently respond to customer needs. By automating such business processes as handling orders or complaints companies can increase their business efficiency, which translates into improved service quality. To this end, Customer Relationship Management (CRM) systems are used, which make it possible to track customer interaction history and manage marketing activities.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANISATION AND MANAGEMENT SERIES NO. 192

A GLOBAL PERFORMANCE INDEX OF INTERNATIONAL HUMANITARIAN NGOS. A PROPOSAL FOR A MEASUREMENT INSTRUMENT

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Purpose: The purpose of this article is to propose a Global Performance Index for humanitarian NGOs that operate on a global basis The proposed index also includes a list of indicators for measuring the performance's effectiveness in the economic, operational, and social areas.
Design/methodology/approach: The analysis of existing theoretical concepts of performance measurement contributed to the development of a model of NGO organizational performance and three key elements emerged: 1. operational effectiveness, 2. economic effectiveness, and 3. social effectiveness. Based on the credit scoring method the list of indicators developed a proposal for a Global Performance Index for humanitarian NGOs operating globally.
Conclusions: The Global Performance Index, together with a proposal of indicators, allows the measurement of NGO performance. It also takes into account specific aspects of international humanitarian NGOs in areas such as their non-profit purpose, their field of activity (emergency relief and development), and their necessary effectiveness and efficiency to gain legitimacy from public and private donors.
Research limitations/conclusions: The limitations of the concept adopted relate to the choice and weighting of measurement criteria. Even if we take into account the actual historical data of the organization, as well as documents specific to the donors or the organizations themselves, there remains a bias of subjectivity that needs to be reduced by specific applications. This would allow testing both the validity of the selected criteria and their relative importance in measuring performance. Such application would benefit from being complemented by analyses of failure situations and stakeholder consultation.
Practical implications: This index of NGO performance indicators may become a tool for potential investors or donors who would like to assess the health of such organizations.
Originality/value: The methodological approach adopted in the article for assessing the performance of NGOs, the model developed and the list of indicators is novel and may, in further research, form the basis for creating comprehensive performance measurement indices for NGOs.
Keywords: non-profit organizations, performance index, credit scoring methods.
Article category: General review, conceptual paper.

1. Introduction

In the management and economics literature, the term *performance* is usually defined in an indirect way and also by referring to the relevant context of the organization's operation. This is primarily due to the lack of an existing common theoretical and scientific basis. Hence, the term performance can encompass a range of meanings from action, process, and means to be understood as the achievement of objectives, results, or even success. When analyzing the terminological approaches adopted and how performance is conceptualized, in many cases one finds a combination of factors adopted by researchers (Bourguignon, 1995).

The lack of a consistent and precise terminological path also relates to the adoption of measurement principles and assumptions to create the construct. Due to several factors related to organizational performance such as the researcher's self-concept of the organization, the personal values informing the choice of criteria, the level of analysis (individual or organizational), and the intended area of application of the criteria will shape the assessment of performance (Quinn, Rohrbaugh, 1981; Morin et al., 2003, Cameron, 1978). Measurement can describe different types of organizational performance, namely financial, social, economic, operational, or societal performance, depending on the research perspective adopted.

The main studies also refer to the evaluation of performance and the determination of its results for private organizations. In contrast, concerning global humanitarian non-governmental organisations (NGOs), the determination of the performance of the activities of these organizations, as well as how to measure the results of these activities, appears to be undefined. It should also be noted that the economic and social conditions of the operation of these organizations from both the private and public sectors, as well as the functioning in crisis and development situations, and the importance of effectiveness and efficiency to maintain credibility among funders, make it difficult to develop a catalogue of metrics. Currently, the literature does not provide a consistent and uniform method for assessing and comparing the effectiveness of international NGOs.

This article aims to propose a Global Performance Index for humanitarian NGOs operating globally. The analytical approach adopted in the article is inspired by credit scoring methods. The article first presents the terminological foundations in the study of the performance of private and public sector organizations. It then shows the main theoretical assumptions pointing to existing NGO performance studies in the literature. The next part presents the methodology used to design a proposal for an NGO scorecard with a performance index tailored to the specifics of international humanitarian NGOs. The results show the composition of a Global Performance Index for humanitarian NGOs. The conclusion allows us to point out the possible application of the Index by NGO managers and donors.

2. Theoretical Context

The concept of industrial performance was first introduced by Adam Smith in *The Wealth of Nations*, in which he compared different methods of industrial production (Smith, 2012) The principles of results-oriented management introduced by Henry Ford in the 1920s, became central to set up objectives within the businesses and enabled developing modern management control and financial auditing systems. On this basis, accounting and financial ratios were introduced to measure the company's performance.

Analysis of for-profit organizations shows multiple approaches to determining the performance of these organisations. The various models of organizational performance proposed in the literature provide insight into the variety of factors that need to be considered when attempting to measure it. They also highlight the organizational design and theoretical framework underlying the definition of organizational performance.

It is worth underlying the approach that is presenting a model of competing or conflicting values. This is a three-dimensional structure that represents the three sets of competing values that an organization will prioritize and that will characterize its performance model. The first reflects the orientation of the organization, which ranges from micro, with a focus on individual interests, to macro, with a focus on the broader interests of the organization. The second one reflects the more flexible or more stable nature of the organization's structure. Finally, the third is linked to the importance attached to objectives (performance and productivity) or means (processes and planning). This approach of competing values makes it possible to identify four main models of organizational performance: the human relations model, the open system model, the internal processes model, and, finally, the rational model (Quinn, Rohrbaugh's, 1981).

Another approach is based on a performance pyramid. This model shows strategic indicators at the top of the pyramid, such as the organization's vision, and financial and market indicators. At the bottom of the pyramid are operational indicators, reporting on quality, delivery, processing time, or costs (Lynch, Cross, 1991).

The performance of the organization is also assessed through Kaplan and Norton's (1992) balanced scorecard. This model tracks the key elements of an organization's strategy from four perspectives: the customer perspective (the customer's view of the organization), the internal perspective (processes to be improved), the innovation and organizational learning perspective, and finally the financial perspective (revenue growth, cost reduction, improved profitability). These four perspectives are interrelated and interact with each other (Kaplan, Norton, 1992).

From a stakeholder interest perspective, performance is examined in a model of Atkinson, Waterhouse, and Wells' (1997) stakeholder model. This model proposes to integrate the satisfaction of an organization's various stakeholders (shareholders, customers, employees, and communities) with the measurement of its performance. It is in the organization's ability to meet its expectations that it will find the means to achieve its primary objectives (as defined by the organization's leaders) and secondary objectives (what the organization gives and expects from its various stakeholder groups to enable them to achieve its primary objectives). Measuring organizational performance should therefore take into account the performance of processes in achieving the organization's secondary objectives (Atkinson, Waterhouse, Wells, 1997).

The Morin, Savoie & Beaudin (1994) model identifies four approaches to organizational effectiveness along four dimensions: economic, political, systemic, and social, reflecting economic efficiency, organizational legitimacy, organizational sustainability, and human resource value, respectively. The model brings together different conceptions of the organization from the perspective of those who seek to measure organizational performance: 'Organisational effectiveness is the judgment that an individual or group of individuals make about an organization, more specifically about the activities, outputs, outcomes or results they expect from it' (Morin et al., 1994).

In the public sector, the research underperformance is based on budgeting approaches. Currently, there is no single definition of performance-based budgeting, as different countries, from the 1990s onwards, have applied performance-based logic by introducing new or specific elements into their public finance organization. However, some concepts remain common. For example, according to Harrison (2003), a performance-based budget establishes one or more main objectives to which resources are linked. Based on these objectives, operational objectives are set and resources are allocated to them. According to Klase and Dougherty (2008), results-oriented budgets aim to measure effectiveness, efficiency, and impact. As such, they require a strategic planning phase for the government agency's objectives, as well as an evaluation of results. The concepts of prioritized objectives (core and operational) and outcomes are therefore a common denominator in these definitions.

When analysing the business context of NGOs, it is important to consider existing analyses and performance measurement approaches applied to both for-profit and public-sector organizations on one hand. On the other hand, the distinct nature and identity of NGOs distinguish them from private sector companies or public sector organizations as they implement social projects (Rahman, 2007). Balcik (2010) argues that NGOs, although different in these characteristics, require similar managerial skills as other organizations. For Freyss (2004) NGOs differ from companies in terms of the commitment they expect from their employees. Managerial management imposed by the imperatives of efficiency and good organizational management is carried out to the detriment of associational management, based on solidarity goals, and threatens the relationship between the individual and his or her organization.

Drucker (1990) points out the difference between NGOs and companies in the management of people and their relationships, with NGOs having to manage a wider range of stakeholders than companies. Rahman (2007) reduces NGO management to three main factors, such as the external environment, operational factors, and stakeholders.

Private companies measure their performance by their ability to survive in a competitive market. Their institutional character, i.e. their ability to survive and prosper, is closely linked to their operational performance, i.e. their ability to meet the demands of the relevant actors in their environment.

Quéinnec (2004) cites a strong teleological consequence in which the welfare of an institutional actor is strongly linked to the performance of an operational object. About NGOs, there is evidence of teleological dissonance. They are private associations acting in the general interest, whose performance is linked to their purpose, their mission. However, these results are not measured by the satisfaction of the beneficiaries of this mission, but by the satisfaction of other actors in their environment, donors, and sponsors. This satisfaction, which is not part of the NGOs' mission, nevertheless gives them legitimacy in their environment, enabling them to accumulate the resources that ensure their survival and institutional well-being.

Performance criteria are mainly monetary in the private sector, whereas for NGOs they are based on projects, missions, and values (Tandon, 1995). Rhodes and Keogan (2005) emphasize the primacy of the initial project in NGO strategy. A company will consider modifying its initial design to create value, whereas for an NGO this is tantamount to denying the founding element of the organization and thus condemning the whole organization (Salem et al., 2019).

Moore (2000) identifies two main criteria that distinguish NGOs from companies and therefore require a different strategic model:

- the value created by the NGO is based on the achievement of a social objective rather than on income generation,
- NGOs receive income other than from purchases by customers.

Indeed, the NGO field has grown in size, importance, and scope of activities carried out, and NGOs now appear to be in a phase of development where the survival of the organization depends on its effectiveness and efficiency (Lewis, 2003; Rahman, 2007). However, it seems difficult to assess the work of an NGO in the same way as that of a commercial enterprise.

Performance indicators for business are the financial outcomes, but for NGOs this performance is reflected in changes in individuals and society, which seem more problematic to assess and measure (Schiffling et al., 2014). In general, it is difficult to establish quantitative measurement criteria to evaluate activities whose objectives are qualitative. According to Brauman (2003), although humanitarian organizations have started to use the same management tools as companies, due to their professionalization, it is nevertheless difficult to measure their performance, i.e. the extent to which their activities meet their original objectives, simply by analyzing their results at the end of the year.

Recognizing the difficulty of assessing the performance of NGOs according to the same criteria as for commercial enterprises, Merlot, Fenwick, and De Cieri (2005) propose five criteria for measuring their performance:

- **Organisational sustainability**: a highly competitive environment makes organizational survival a goal for NGOs (Lindenberg, 2001).
- **Funding:** profitability and economic performance criteria imposed by donors are now essential for NGOs.
- **Organisational performance**: including staff turnover, staff retention, and health or safety incidents.
- **Impact on the societies in which they operate**: the performance of an NGO is measured primarily by its results and the impact of its work (Salm, 1999).
- **Level of independence**: measures the extent to which an NGO meets the expectations of its stakeholders and fulfils its mission (Grossman, Rangan, 2001).

As part of the contracts between NGOs and their donors and "in the name of a vision of aid effectiveness reduced to the avoidance of waste" (Freyss, 2004), NGOs are held accountable in the form of financial and activity reports that are supposed to legitimize their capacity to operate before, during and after project implementation.

However, as Edwards and Hulme (1994) point out, the accountability required by donors can focus too much on control functions (mainly financial) and imply a greater administrative and management burden, a 'bureaucratization' of processes. Performance evaluations that focus on short-term quantitative targets, which are easier to measure, do not necessarily reflect program quality. Nevertheless, these evaluations remain essential for NGOs in their quest for legitimacy in the eyes of donors and civil society in general.

Government institutions are the main donors funding various aid and development projects. These donors have therefore introduced their own criteria and evaluation tools to analyse the organisations that receive their grants (Dube et al., 2016). On the other hand, NGOs operate in the same areas of activity as the state and sometimes replace the authorities of certain countries in implementing certain social or development programs when the government fails to fulfil its missions (Charter for Change, 2019).

Given the specificity related to the social mission of NGOs, the diversity of their stakeholders, and their non-commercial status, it is important to develop an organizational effectiveness model tailored to NGOs (Agenda for Humanity, 2016). The above theoretical analysis has demonstrated the need to develop an approach in which NGO organizational effectiveness can be defined by combining three key components:

1. economic effectiveness.
2. operational effectiveness.
3. social effectiveness.

The operational component refers to the dimension of organizational sustainability. It is the sustainability and sustainability of an organization's activities that guarantee its longevity. Sustainability can be measured by three criteria: relevance, quality of action, and impact. These three criteria are interrelated and must be considered together to ensure effective and sustainable actions.

The economic component refers to the effectiveness and efficiency of the NGO. Although the goal of the NGO is not profit, balance, and access to resources must nevertheless be guaranteed. The criteria for measuring this effectiveness are goal achievement, responsiveness, and competitiveness.

The social component refers to the value of human resources in the organization. The criteria for measuring this value are employee development, employee involvement, work climate, and adherence to the organization's goals, principles, and values. In addition, it refers to the legitimacy of the organization in the eyes of various stakeholders and its environment. It is measured by a satisfaction criterion for each of these stakeholders: affected people, donors, association members, and the community.

The components of organizational performance revolve around governance, understood as a set of tools and procedures that foster value creation and collaboration among the NGO's stakeholders (Speckbacher, 2008). In this approach, by participating in the development of the organization's resources and promoting the fulfilment of its mission, each stakeholder contributes to the creation of individual and collective value in the NGO. In this way, a shared understanding of the NGO's vision and mission by all its stakeholders ensures organizational performance (Speckbacher, 2008).

This model of organizational performance has the advantage of taking into account various aspects related to the structure of NGOs, their modus operandi, their governance, and the environment in which they operate and evolve. However, it is necessary to define indicators to measure these different performance criteria and to consider differently the articulation of the social, operational and economic aspects of performance to take into account the correlation between some of the criteria for measuring this performance. This new articulation, as well as the identification of criteria and measurement factors, is the subject of the empirical section presented below.

3. Methodology

The objective of this article is to propose a Global Performance Index for humanitarian NGOs operating globally. The methodology used consisted of several stages.

The first stage was to determine three components of the performance of international humanitarian NGOs that is: economic efficiency, and social effectiveness. And operational efficiency.

The second stage was based on scoring techniques (Fensterstock, 2003) to establish the typology of measurement indicators (ratios) and weighting factors to reflect their relative importance. Originally, this method then called credit scoring, was used in the banking sector to predict a borrower's likelihood of repaying a loan. Scoring is a method of financial analysis that attempts to synthesize several indicators into a single index that can distinguish financially sound companies or customers from those who are in default (Elhamma, 2009).

Through a statistical operation, a weight or number of points is assigned to various measurement indicators derived from historical data on the organization. This involves weighing each factor. The sum of the scores obtained, i.e. the score, makes it possible to predict the potential creditworthiness of the organization. In most scoring techniques, the weighting of factors is based on critical experience or statistical analysis (discriminant analysis, decision trees, neural networks, etc.) Mathematically, the score can be represented by the following equation, in which the index (score) is determined by the sum of the products of the weighted factors or coefficients. To interpret the value of this index, it is necessary to establish a reference value of the index (benchmark) by comparing the score with results obtained previously in evaluations of the same type of organization.

Index (score) = p1F1 + p2F2 + p3F3 + ... + pnFn

Avec

Fi: factors

pi: weighting factor related to

i: 1, 2, ..., n

The third stage of our study was to analyse financial reports and activity reports of two French humanitarian NGOs (MSF and ACF) from the years 2018-2021. The non-profit organizations present in their reports a huge number of data and indicators. However, the reports are not standardized and the content is quite different not only from one organization to another but also from one year of the same NGO to the next one. To harmonize indicators we identified the responsible data in the reports corresponding to the three dimensions of overall performance.

The next step was to determine the factors considered most important in light of the requirements of various donors such as Agence Française de Développement, OECD, European Union. It allowed us to select indicators and define the relative weight given to each indicator.

Then, for each of these factors, a weight was assigned according to the following rule: 1. important; 2. very important; 3. important.

4. Results

The concept of elaborating a Global Performance Index was derived by identifying three areas: economic, operational, and social. Within each of these areas, indicators have been identified to measure the performance of humanitarian NGOs. These formed the basis for configuring a comprehensive index, represented by the equation:

$$GPI = F1+F2+3F3+2F4+3F5+3F6+2F7+2F8+F9+F10+2F11+3F12+2F13+3F14+F15+2F16$$

Where Fi is expressed in points according to the scale shown in the last column of the above table.

This indicator is composed of three dimensions of performance. In this case, the GPI is presented in the following form:

$$GPI = \text{Economic PI} + \text{Social PI} + \text{Operational PI}$$

or

$$GPI = (F1+F2+3F3+2F4) + (3F5+3F6+2F7+2F8+F9+F10+2F11+3F12) + (2F13+3F14+F15+2F16)$$

Table 1 presents the composition of the Global Performance Index for humanitarian NGOs. Three dimensions of performance are measured by some pre-established indicators.

Table 1.
Proposal of performance indicators for international humanitarian NGOs

Performance dimension	Factor	Title	Formula	Unit	Points
Economic efficiency	F1	Management effectiveness	Net profit/own resources	%	in absolute terms, 0 to 2 = 10; 2 to 4 = 9; 4 to 6 = 8; 6 to 8 = 7; 8 to 10 = 6; >10 = 5
Economic efficiency	F2	Leverage	Debt/equity	%	0 to 10 = 10; 10 to 20 = 9 .... 90 to 100 = 1
Economic efficiency	F3	Operating costs	Administrative expenditure/total expenditure	%	in absolute terms, 0 to 2 = 10; 2 to 4 = 9; 4 to 6 = 8; 6 to 8 = 7; 8 to 10 = 6; >10 = 5
Economic efficiency	F4	Operational autonomy	Available reserves in the number of months of operation	Nb months	-
Social effectiveness	F5	Donor confidence	Amount of own resources	€ million	0 to 10 = 1; 10 to 20 = 2 .... > up to 100 = 10
Social effectiveness	F6	Publicity	Ratio of private to own resources	%	0 to 10 = 1; 10 to 20 = 2 .... 90 to 100 = 10
Social effectiveness	F7	International diversification	Resources from partner offices (Australia, Japan, USA)/private resources	%	0 to 10 = 1; 10 to 20 = 2 .... 90 to 100 = 10

Cont. table 1.

Social effectiveness	F8	Loyalty	Number of regular donors (monthly payment)	Nb pers	0 to 20 000 = 1; 20 000 to 40 000 = 2; ... >200 000 = 10
Social effectiveness	F9	Skills development	Number of people trained	Nb pers	0 to 50 = 1; 50 to 100 = 2;... >250 = 10
Social effectiveness	F10	Transparency	Transparency of remuneration (yes/no)	binary (0 or 1)	-
Social effectiveness	F11	Attractiveness of the mission	Number of first missions/number of departures	%	0 to 5 = 1; 5 to 10 = 2; ... >25 = 10
Social effectiveness	F12	International openness and integration	Number of national full-time equivalent workers/number of field workers	%	0 to 10 = 1; 10 to 20 = 2 .... 90 to 100 = 10
Operational efficiency	F13	Operational coverage abroad	Nb country of intervention	Country Nb	0 to 5 = 1; 5 to 10 = 2; ... >25 = 10
Operational efficiency	F14	Performance	The ratio of operating expenditure to total expenditure	%	<50 = 0; 50 to 55 = 1; 55 to 60 = 2; etc.
Operational efficiency	F15	Ability to act	Number of field staff (national and international)	Nb pers	0 to 500 = 1; 500 to 1000 = 2; ...; >5000 = 10
Operational efficiency	F16	International network	Number of offices abroad	Nb Offices	0 to 2 = 1; 2 to 4 = 2; ... >20 = 10

Source: own study.

Indicators can be interpreted as follows:

Factor F3 is a part of economic efficiency measuring together with factors F1, F2 et F4 the financial performance of an NGO.

Moreover, for factor F3, Operational Expenditure (Administrative Expenditure/Total Expenditure), the weight is 3 and is therefore considered crucial for the survival of the NGO by the institutional donors.

Indeed, in the response documents to calls for proposals from public donors, this criterion invariably appears for all donors. It is also highlighted in the financial reports of NGOs that communicate about what percentage of given funds is used for administration proposes (out of 100 donated euros 'so much' is used for administrative costs...). The donor wants to make sure that the majority of their donation is used by the organization for specific activities on the ground and not for the bureaucracy.

NGOs' interest in measuring their performance and communicating the results has increased recently because of the growing number of non-profit organizations and parallelly decreasing amounts of donations. (Ciucescu, Feraru, 2014). The competition between NGOs to gain funding is more and more challenging. Moreover, donors request to know how the funds are used. NGOs are obliged to demonstrate the effectiveness of their actions and the proper use of the funds provided. In this sense, the GPI can also be used to compare NGOs against each other, providing donors with a comparison against the same criteria. Moreover, the GPI can be used by NGOs as a communication tool for potential donors.

NGO managers can use this Index to assess the performance of NGOs on an annual basis and thus can be used to measure the progress of this performance over time. In addition, this indicator can be broken down into three dimensions that allow NGO managers to identify potential dysfunctions in an organization's department or service.

5. Conclusions

The Global Effectiveness Index presented in this article is an attempt to develop a list of indicators measuring the performance of NGOs aiming to address specific aspects of international humanitarian NGOs: their non-profit purpose, their field of activity (emergency relief and development), their necessary effectiveness and efficiency to gain legitimacy from public and private donors.

There are limitations to the study in the approach presented by the authors, which relate especially to the choice or weighting of the measurement criteria. Taking into account the actual historical data of the organization, as well as documents specific to the donors or the organizations themselves, there remains a bias of subjectivity that needs to be reduced through specific applications. This would allow testing both the validity of the selected criteria and their relative importance in measuring performance. This application would benefit from being complemented by analyses of failure situations and stakeholder consultations.

In addition, the approach taken in developing the list of metrics, as well as the financial scoring-based method used, should be subjected to further empirical verification on a much larger test sample.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

FUNCTIONING OF BUSINESS INCUBATORS AND TECHNOLOGY PARKS IN POLAND IN THE CONTEXT OF INDUSTRY 4.0

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Purpose: The aim of this article is to identify and evaluate the research infrastructure and the scope of services offered by business incubators and technology parks in Poland. This evaluation specifically focuses on the development of technology start-ups operating in Industry 4.0.

Design/methodology/approach: This study employed a netnographic survey method, encompassing the entire population of incubators and technology parks in Poland, including the start-ups operating within them. The analysis addressed three questions: Do parks and incubators specialize in supporting high-tech industries? How many companies are associated with a given park? Do the parks have facilities for conducting R&D services? The netnographic study reviewed the current state of services and laboratories, drawing on publicly accessible data from the websites of Polish technology parks and business incubators. Additionally, the article illustrates the importance of support from incubators and technology parks by presenting the development trajectories of the top startups in Poland in 2023, as recognized in the CEE Startup Challenge competition.

Findings: Business incubators and technology parks are fundamental to the innovation ecosystem, contributing to technology transfer, creating innovative solutions, and supporting new enterprises. This article highlights the role of 73 technology parks and business incubators as foundational for the operation of startups, with particular emphasis on the space industry. It presents the number of laboratories dedicated to high-tech industries, categorized by voivodeships, and includes a brief discussion on the details of the technologies used. The industry specialization of technology parks and incubators, particularly in high-tech and space industries, is also explored. The analysis of the development trajectories of the best startups in Poland revealed that three out of six winning startups used the services of technology parks, two received support from the National Center for Research and Development, and one did not use any public support.

Research limitations/implications: This article assesses technology parks and business incubators in the context of Industry 4.0 and examines how they support the entrepreneurship of technology startups. Future research should investigate startups in terms of diagnosing needs and assessing support received from these entities. It should also propose improvements in the operations of parks and incubators, with particular focus on the space industry. Suggestions for enterprises on adapting to Industry 4.0 requirements would be beneficial. Additionally, the potential influence of park and incubator analyses on investments in modern technologies in Poland, and whether these institutions contribute to economic growth by supporting innovative ventures, is worth exploring.

Practical and Social implications: Knowledge about the role of technology parks and business incubators in Industry 4.0 can change societal attitudes towards entrepreneurship, innovation, and technology, fostering a positive approach to digital transformation. The research findings can inform public policy by highlighting the effectiveness of enterprise support in the Industry 4.0 era, potentially leading to more tailored government programs. The business and technology sector might adapt its standards and practices in light of these findings, thereby offering more effective support to start-ups and technology companies. The article is intended for scientists and researchers, business practitioners, entrepreneurs, and managers, providing valuable information, practical conclusions, and improvement tips in the context of Industry 4.0. It is also significant for policymakers responsible for shaping regulations and support programs for entrepreneurship.

Originality/value: The article conducts a literature review to define the boundaries of high-tech industries fundamental to Industry 4.0. The analysis of services and laboratories offered in parks and incubators in this context provides insight into how these institutions adapt to the evolving business environment. This comprehensive study of parks and incubators is the first of its kind in Poland.

Keywords: business incubator, technology park, start-up, seed capital, venture capital.

Category of the paper: research paper.

1. Introduction

In Poland, despite the dynamic development of the innovation sector, there is a noticeable research gap in the area of support for business incubators and technology parks for high-tech industries. The limited number of published scientific works on this topic presents a challenge for researchers, practitioners, and decision-makers who strive to fully understand and optimally shape the incubation ecosystem. The scarcity of publications hinders the identification of best practices, the analysis of the effectiveness of existing support models, and the prediction of potential development directions for high-tech incubators in Poland. Notable publications in English include: Butchart, R.L. (1987) "A New Definition of High Technology Industries", Economic Review, 400, pp. 82-88; Ghobakhloo, M. (2020) "Industry 4.0, Digitization, and Opportunities for Sustainability", University of Hormozgan, Iran; Glasson, J. (1992) "An Introduction to Regional Planning", 3rd edition, London: UCL Press; and Mason, C., Brown, R. (2014) "Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship", OECD, Paris.

Industry 4.0 (Lasi, Kemper, Fettke, Feld, Hoffmann, 2014) marks a new stage in the evolution of the industry, based on advanced digital technologies, data integration, and automation. It is characterized by three main directions: automation and mechanization, miniaturization, and digitalization and networking. Industry 4.0 sets the trend towards more individualized, service-oriented, and socially responsible production.

The fourth industrial revolution is a dynamic process of digital transformation that significantly affects the functioning of society and enterprises. Industry 4.0 is developing exponentially, contributing to the digital revolution. It involves connecting intelligent machines and computers that communicate with each other, integrate with the environment, and can make decisions with minimal human involvement. Automation, in this context, means the use of advanced robots, control systems, and production management systems, which increases flexibility, efficiency, and quality of production (Ghobakhloo, 2022).

The technology sector is closely related to the research, development, or distribution of technology-based goods and services. It includes enterprises related to software development, electronics production, computers, and services and products related to information technology. The term "technology sector" is often used interchangeably with "technology industry" (Frankenfield, 2022).

A technology startup is an enterprise that operates to bring technology services and products to the market. They modify existing solutions by implementing modern technological innovations or introducing innovative services. Examples of technology startups include IoT (Internet of Things), FinTech (finance), BioTech (biotechnology), PropTech (real estate), MedTech (medicine), BigData, Blockchain (data), and Smart City (cities) (Blank, 2020).

This direction of development is significant worldwide, and understanding how Poland is adapting to this trend is important both nationally and internationally. Technology parks and business incubators play a crucial role in supporting innovative ventures in the technology sector. Recognizing the benefits and challenges of Industry 4.0 for these institutions will enable effective support for innovation and entrepreneurship development in Poland. Industry 4.0 may also significantly influence Poland's international competitiveness. Examining the functioning of business incubators and technology parks can reveal strategies for creating competitive advantages and maximizing benefits. Additionally, Poland benefits from EU funds that support Industry 4.0. Observing the functioning of technology parks and business incubators will allow for adapting activities to market needs and assessing the effectiveness of investments. The aim of this article is to identify and evaluate the infrastructure and scope of services offered by business incubators and technology parks in Poland, focusing on the development of technology start-ups operating in sectors related to Industry 4.0. This article may contribute to increasing interest in the importance of the role of business incubators, technology parks, and Industry 4.0.

2. Literature review

The classic approach to identifying "high-tech" companies is based on a sectoral approach, where "high-tech" industries are identified by specific characteristics. This approach originated in the UK with Butchart (1987). Using the four-digit level of the 1980 Standard Industrial Classification (SIC), it identified high-tech industries as those exhibiting higher-than-average research and development expenditures, as a percentage of sales, or employing a higher proportion of "skilled scientists and engineers" compared to other sectors (Butchart, 1987).

This definition was later updated in a study of the high technology industry in Oxfordshire using SIC 2003 by Glasson et al. (2006). They argued that this definition must consider the local or regional industrial structure. Consequently, Glasson et al.'s definition (2006) was adapted to account for local and regional economic conditions in Oxfordshire. This combination of precise criteria with an element of subjectivity, considering local conditions, is particularly compelling. Therefore, to incorporate the influential oil and gas sector, a significant part of Scotland's industrial strength, Glasson et al.'s definition was modified (Glasson, Chadwick, Lawton-Smith, 2006).

However, a weakness of this approach is that not every company within these sectors is necessarily "high-tech". Additionally, this approach excludes high-tech companies in industries not defined as high-tech (Mason, Brown, 2014).

The high-tech industry encompasses various branches and industries (Słowiński, 2023; GUS, 2002):

- chemical industry, related to the production of plastics, synthetic materials, and inorganic chemicals. This industry also includes the pharmaceutical industry, specializing in biotechnology-based medicine production.
- arms industry,
- aerospace and rocket industry, focusing on the production of flight and space research equipment, rockets, spacecraft, and aircraft,
- precision industry, concentrating on producing medical and optical equipment (telescopes, lenses, microscopes) and measuring devices. This industry is often located near scientific centers due to qualified staff requirements,
- transport industry, including car, ship, and aviation production,
- industrial electronics industry, producing integrated circuits, transistors, microprocessors, semiconductors, printing and measuring devices, medical and telecommunications equipment, as well as research and office equipment.

High-tech areas and products are characterized by significant R&D intensity. The high-tech industry is also defined by technologies included in licenses and patents, a high level of scientific and technical staff employment, significant technical equipment turnover, long-term cooperation with research centers and other high-tech enterprises, and the need for high capital expenditure. Examples include astronautics, biotechnology, pharmacy, nuclear physics, computer science, quantum and materials engineering, aviation, medicine, robotics, and telecommunications (Wojnicka, 2006).

The development of high-tech industries is highly beneficial for the economy. The concept of a learning region (Florida, 1995) suggests that regions become central points for knowledge creation and acquisition. Regions are viewed as key economic units in the global economy, where globalization and regionalization are interconnected. According to this concept, regions are natural economic zones whose importance escalates in the era of globalization. Regions become focal points for knowledge creation and acquisition, taking on the characteristics of "learning regions". These regions act as collectors and repositories of knowledge and ideas, providing infrastructure that enables the flow of knowledge, ideas, and learning. The infrastructure supporting the knowledge-based economy includes:

- production infrastructure, i.e. a network of production companies,
- human infrastructure, i.e. the labor market from which companies draw employees,
- technical infrastructure (physical and communication) enabling the global flow of information, goods and services,
- a capital allocation system and a financial market that supports knowledge-based organizations,
- mechanisms of industrial governance, including formal and informal rules and norms that regulate relationships between companies, as well as between companies and government institutions.

The transition from a mass production economy to a knowledge-based economy represents a fundamental shift in how goods are produced and how the economy is organized (Romanowski, 2011, 2015). In the knowledge-based era, value and economic growth are primarily derived from the human mind rather than physical labor. The author notes that globalization does not signify the end of the role of regions; rather, regions are emerging as key economic units. The globalization process unfolds through complex systems of regional interdependence and integration. The future is moving towards strategies and policies focused on sustainable advantage at regional and national levels, rather than just national competitiveness. Sustainable advantage involves shifting focus from short-term economic performance to creating, maintaining, and sustaining conditions conducive to global leadership through continuous technology improvement, human resource development, clean production technologies, waste elimination, and a commitment to ongoing environmental improvement. The concept of a learning region suggests that regions are integral to the knowledge economy, providing the necessary infrastructure for the growth of knowledge-based organizations. Business incubators and technology parks, integral to the business environment infrastructure, play a pivotal role in developing the learning region.

A business incubator is an entity, an economic complex of various legal forms, designed to support entrepreneurship. Their offerings include real estate with premises and services to aid small and medium-sized enterprises. Incubators focus on supporting enterprise development, improving operational conditions, and aiding in the implementation of new technologies. Incubator services include (Brol, 2009, p.330): promoting entrepreneurship, consulting in finance, law, economics, organization, and patents; access to local business networks; support in acquiring funding; access to service and technical infrastructure; creating an environment conducive to starting a business, primarily for innovative projects; training; support in establishing contacts with scientific institutions for project evaluation; office and administrative services; and enabling enterprises to use premises on favorable rental terms, which increase as the company develops and participates in the incubator.

Depending on the target group, business incubators can be categorized into (Brol, 2009, p.331):

- incubators supporting young entrepreneurs from the small and medium-sized enterprises sector who are starting or are just about to start a business,
- incubators supporting the ideas of young people and students,
- incubators that provide assistance to social economy entities.

The scope of incubator activities can be broad, yet they are always well-conceived, adapted, and specialized to specific situations. The primary focus is on aiding innovative enterprises, especially in the early stages. The duration of cooperation, depending on the form of cooperation, rules, statute, and characteristics of the venture established in the incubator, can range from several months to several years. For entrepreneurs, the appropriate selection of incubator residents who can provide mutual assistance is also crucial. The operation of incubators is primarily supported by EU funds (Świeszczak, 2016, p. 67).

The types of business incubators include academic, social, technological, and scientific and research (Świeszczak, 2016). Academic incubators, established by universities under the provisions of the Act on Higher Education, aim to optimally utilize the technical and intellectual potential of a university and to transfer and apply research results in the economy. They also support the economic activities of the academic community, including students and university staff who are entrepreneurs. Academic incubators encompass pre-incubation, supporting individuals who want to start a business, as well as those supporting existing market incubation principles (Świeszczak, 2016, p. 68).

Social incubators, initiated by non-governmental organizations or local governments, offer training, advisory, and infrastructural assistance to social economy entities. They support people at risk of social exclusion, labor market integration, social assistance entities, and those interested in social economy entities (Pikuła-Małachowska, 2016, p. 94).

Technology incubators, often structured as technology or science and technology parks, facilitate improved technology and information flow between entrepreneurs and scientific entities. They focus on supporting small and medium-sized enterprises introducing new technologies to the market. Scientific incubators concentrate on implementing and promoting competitive and innovative ventures (Pikuła-Małachowska, 2016, p. 95).

In Polish legislation, the concept of a technology park was defined in 2002 in the Act on Financial Support for Investments. A technology park is a complex of separate properties with technical infrastructure, designed to facilitate the flow of technology and knowledge between entrepreneurs and scientific entities. Technology incubators are often located in these areas (Act of March 20, 2002). The term "technology park" is synonymous with various names used interchangeably around the world, such as technopoly, research park, science and technology park, or science park. The International Association of Science Parks (IASP) has defined a technology park as an institution managed by experts whose main goal is to enhance the competitiveness and innovative culture of companies and scientific and research institutes associated with the park. The park oversees the processes of technology and knowledge flow between enterprises, universities, and research institutions. It also facilitates the development and establishment of innovative enterprises by offering incubation opportunities and assistance in creating spin-off companies. A science park performs similar functions to a technology park, but the production there is limited only to prototype production (Act of March 20, 2002).

Industrial or industrial-technology parks also operate alongside technology park institutions. These concepts vary depending on specialization or business profile. An industrial park is a group of separate properties with technical infrastructure that enables running a business under special conditions. The industrial-technology park is a hybrid between a technology park and an industrial park. It may take the form of a complex of buildings conducting activities that enable the flow of scientific information between entrepreneurs and scientific entities, serving as an infrastructure. There are also business and functional connections between technology and science parks. These parks are created by local authorities to provide favorable conditions for conducting business, especially for small and medium-sized enterprises (Matusiak, 2011, p. 186).

3. Method

The article employs the netnographic method. Netnography is a method of examining virtual communities through content analysis, observation, and other methods of analyzing content from the Internet (Kozinets, 2012).

The netnographic study aimed to review the current state of services and laboratories based on publicly available data from the websites of technology parks and business incubators in Poland, the towns where these institutions operate, and the Polish Investment and Trade Agency S.A. It was a comprehensive examination. To conduct the study properly, three research questions were posed:

1. Do they specialize in high-tech industries?
2. How many companies are associated with a given park?
3. Do they have the resources to conduct R&D services?

The collected information (Table 2) indicated that there are technology parks in Poland specializing in high-tech industries. These include Wrocław Industrial Park, Lublin Science and Technology Park, Lifescience Park Cracow, Mielec Industrial Park, Podkarpacki Science and Technology Park AEROPOLIS, Torun Technology Park, Łomża Industrial Park, Euro-Centrum Industrial Park, Technopark Pomerania, IT LOFT Park in Tychy, YouNick Technology Park, Kutnowski Agro-Industrial Park, Puławy Science and Technology Park, Branice Science and Technology Park, Industrial and Technology Park "Ekopark" in Piekary Śląskie, Lower Silesian Technology Park "T-Park", Bukowice Industrial Park, Lubuski Industrial Park Technology, Science and Technology Park "Świerk", Płock Industrial and Technology Park, Tarnobrzeg Industrial and Technology Park, Science and Technology Park Polska-Wschód in Suwałki, Gdańsk Science and Technology Park, Pomeranian Science and Technology Park Gdynia, Sosnowiec Science and Technology Park, Regional Science and Technology Center, Poznań Science and Technology Park of the University Foundation. A. Mickiewicza, the Science and Technology Park of the Koszalin University of Technology and the Bielsko-Biała Aviation, Entrepreneurship and Innovation Technology Park. Each technology park is characterized by an individual approach to the company seeking its services. In addition to basic services, support also includes providing specialized laboratories or prototyping facilities and expert knowledge.

The study involved analyzing the websites of all technology parks and business incubators in Poland. If an institution lacked a website or the data was incomplete, information was sourced from the websites of the towns where the incubator or park was located. An important source of information was the official website of the Polish Investment and Trade Agency, which contained crucial information on the functioning of technology parks and business incubators. Each park and incubator was evaluated based on the research questions.

Due to the extensive factual material, it was decided to describe the startups that were awarded in the EEC Startup Challenge 2023, i.e., the 15th edition of the European Economic Congress in Katowice, and then present their path to success.

4. Results

Despite sharing many comparable features, industrial and technology parks are entities of great diversity. Each technology park is distinguished by its unique character, shaped by regional cultural, economic, and social conditions, as well as local growth factors. It is not feasible to isolate a single practical park model or organizational template that guarantees success. Specific initiatives reflect the local science and business ecosystem, industrial traditions, type of economy, and cultural aspects of entrepreneurship. In Poland, each voivodeship hosts several technology parks (Table 1) (www.paih.gov.pl, 2023).

In Poland, across sixteen voivodeships, there are 73 institutions referred to as technology parks or business incubators. The highest concentration of these institutions is in the Silesian Voivodeship (16), while the fewest are found in the Lubuskie Voivodeship (1).

Table 1.
List of technology parks in Poland divided into voivodeships, along with hi-tech laboratories

Voivodeship	Name of the park (number of enterprises in brackets)	Number of laboratories for hi-tech industries
Dolnośląskie	• Lower Silesian Technology Park "T-Park" (22), • Noworudzki Industrial Park (25), • Bukowice Industrial Park (no data), • Wrocław Industrial Park (45), • Wrocław Technology Park S.A. (141),	14
Kujawsko-Pomorskie	• Bydgoszcz Industrial and Technology Park (73), • Grudziądz Industrial Park (11), • Industrial Park in Solec Kujawski (13), • Płużnicki Investment Park (no data), • Toruń Technology Park (70), • Vistula Park I and II (7), • Włocławek Economic Development Zone - Industrial and Technology Park (no data),	1
Lubelskie	• Lublin Science and Technology Park (10), • Puławy Science and Technology Park (146),	5
Lubuskie	• Lubuski Industrial and Technology Park (84),	6
Łódzkie	• Bełchatowsko Kleszczowski Industrial and Technological Park (no data), • Bionanopark (35), • Kutno Agro-Industrial Park (43), • Boruta Zgierz Industrial Park (11),	1
Małopolskie	• CracowTechnology Park (63), • Lifescience Park Cracow (no data), • Branice Science and Technology Park (98),	8
Mazowieckie	• Science and Technology Park "Świerk" (13), • Płock Industrial and Technology Park (29),	8
Opolskie	• Kędzierzyńsko-Koźle Industrial Park (no data), • Science and Technology Park in Opole Sp. z o. o. (26),	1
Podkarpackie	• Mielec Industrial Park (52), • Industrial Park of the Leżajsk Commune (10), • Podkarpackie Science and Technology Park AEROPOLIS (91), • Tarnobrzeg Industrial and Technology Park (37),	1
Podlaskie	• Białystok Science and Technology Park (35), • Science and Technology Park Poland-Wschód in Suwałki (74), • Łomża Industrial Park (101),	8

Cont. table 1.

Pomorskie	• Gdańsk Science and Technology Park (30), • Kwidzyn Industrial and Technology Park (19), • Pomeranian Science and Technology Park Gdynia (189), • Słupsk Technology Incubator (24),	12
Śląskie	• AURO Business Park Gliwice (no data), • Bielsko Aviation, Entrepreneurship and Innovation Technology Park (6), • Bytom Industrial Park (5), • Częstochowa Industrial and Technology Park (no data), • Euro-Centrum Science and Technology Park (no data), • Euro-Centrum Industrial Park (no data), • GPP Business Park (no data), • IT LOFT Park in Tychy (no data), • Science and Technology Park "Technopark Gliwice" (21), • Industrial and Technological Park "Ekopark" in Piekary Śląskie (8), • Sosnowiec Science and Technology Park (9), • Synergy Park (12), • Silesian Business Incubator (53), • Silesian Industrial and Technology Park (no data), • Zawiercie Industrial and Technology Park (6), • Żory Industrial Park (31),	6
Świętokrzyskie	• Kielce Technology Park (111), • Regional Science and Technology Center (no data),	7
Warmińsko-Mazurskie	• Elbląg Technology Park (27), • Olsztyn Science and Technology Park (48), • Science and Technology Park in Ełk (20),	10
Wielkopolskie	• Eureka Technology Park (10), • Kalisz Business Incubator (no data), • Poznań Science and Technology Park of the University Foundation. A. Mickiewicza (88), • Poznań Technology and Industrial Park (no data), • Turkish Business Incubator (24), • YouNick Technology Park (9),	2
Zachodniopomorskie	• Białogard Investment Park INVEST-PARK (6), • Goleniowski Industrial Park (45), • Science and Technology Park of the Koszalin University of Technology (21), • Industrial Park of Modern Technologies in Stargard (15), • Regional Park in Gryfino (no data), • Szczecin Shipyard "Wulkan" Sp. z o. o. (no data), • Technopark Pomerania (51).	Brak danych

Source: www.paih.gov.pl, 2023.

A comprehensive analysis of technology parks and incubators revealed the range of services offered to young entrepreneurs. It's notable that the scope of services in these institutions is similar. Most technology parks or business incubators (60 out of 72) provide workspace, including offices, conference rooms, and laboratories for companies requiring specialized equipment. They offer business consulting in strategy, financial planning, marketing, and product development, and organize training and workshops, such as in business management. They assist in obtaining financing by providing information about grants and investment funds, facilitate building business relationships by enabling entrepreneurs to meet potential partners, clients, investors, or mentors, and provide mentorship to help develop businesses through guidance and experience. They offer access to specialized equipment and technological infrastructure, collaborate with research centers, allowing companies to leverage the latest science and technology achievements, support legal and regulatory issues related to running a business, help companies establish international contacts with partners and customers, and foster cooperation with universities and research centers, giving entrepreneurs access to the latest technologies and research.

Technology parks and business incubators often tailor their services to the local market's specificity and the dominant industry profile in a region. Some institutions focus solely on selling or leasing space, totaling 12, including Płużnicki Investment Park, Vistula Park I and II, Włocławek Economic Development Zone - Industrial and Technology Park, Kutnowski Agro-Industrial Park, Leżajsk Commune Industrial Park, Tarnobrzeg Industrial and Technology Park, AURO Business Park Gliwice, Częstochowa Industrial and Technology Park, Industrial and Technological Park "Ekopark" in Piekary Śląskie, Białogard Investment Park INVEST-PARK, Goleniowski Industrial Park, and Regional Park in Gryfino.

In Poland, 23 technology parks and business incubators possess research and development (R&D) facilities. These include Wrocławski Park Technologiczny S.A., Bydgoszcz Industrial and Technology Park, Puławy Science and Technology Park, Lubusz Industrial and Technology Park, Bionanopark, Krakowski Park Technologiczny, Lifescience Park Kraków, Science and Technology Park "Świerk", Płock Industrial and Technology Park, Science and Technology Park in Opole, Podkarpacki Science and Technology Park AEROPOLIS, Białystok Science and Technology Park, Gdansk Science and Technology Park, Pomeranian Science and Technology Park Gdynia, Słupki Technology Incubator, Euro-Centrum Science and Technology Park, IT LOFT Park in Tychy, Kielce Technology Park, Elbląg Technology Park, Olsztyn Science and Technology Park, Science and Technology Park in Ełk, Poznań Science and Technology Park of the University Foundation A. Mickiewicza, and YouNick Technology Park. R&D resources are a crucial part of their infrastructure that supports the innovation and technological development of enterprises. These resources may include advanced laboratories for research, prototype development, and new technology testing. The mentioned technology parks collaborate with R&D centers, universities, or other scientific institutions, allowing entrepreneurs to utilize their resources and expertise. They provide companies with access to specialized tools, equipment, and technology, often too costly for individual businesses. Employees at these parks are experts in various fields, providing substantive support to entrepreneurs in developing innovative solutions. They support companies in implementing R&D projects by offering financing, mentoring, and access to specialist knowledge.

R&D facilities in technology parks and business incubators are vital components of the innovation ecosystem, supporting the development of modern technologies and aiding companies in commercializing their ideas. Cooperation with research institutions and providing specialized resources fosters favorable conditions for the growth of enterprises in technology and innovation.

In Wrocław Technology Park S.A., there are 14 modern laboratories and prototype rooms equipped with world-class equipment. This technologically advanced infrastructure enables research to transform innovative ideas into products. The park offers support in implementing research and development projects, and training in chemistry, biotechnology, molecular biology, and pharmacy. Enterprises focusing on areas such as cryogenics, catalyst production, innovative energy, generic pharmacy, or testing the physical properties of various products are prevalent. The park facilitates the creation of R&D consortia and establishes contacts between the scientific and business communities, both nationally and internationally. Technological facilities include laboratories and machine rooms equipped with, among others, a supercritical extractor, electropasteurizer, or spray dryer. The Bydgoszcz Industrial and Technology Park offers rental halls that can be used as warehouse space, workshops, showrooms, demonstration centers, and laboratories.

The Puławy Science and Technology Park hosts several laboratories: the Metal Injection Molding Laboratory (MIM), JG Machine and Tools Laboratory, Biodegradable Plastics Laboratory, Biologically Active Compounds Laboratory, Bioprocesses Laboratory, Technology and Development Division, Grupa Azoty Zakłady Azotowe Puławy S.A.

Lubuski Industrial and Technology Park offers CNC machine rental and coordinate measuring machine rental. The park also houses various laboratories: the Energy Generation Laboratory, the Sustainable Construction Laboratory, the Renewable Electricity Sources Laboratory, the Electromagnetic Compatibility Laboratory, the Acoustics and Electrostatics Laboratory, and the Acoustic Insulation Laboratory.

Bionanopark (Łódź Voivodeship) provides a wide array of research services: surface testing, biological and chemical analysis, pharmaceutical testing, cosmetic testing, biochemistry and cell culture, molecular biology and bioinformatics, industrial biotechnology, wine authentication, food testing, textile testing, 3D printing and scanning, medical implants, personalized medicine, organic electronics, computing resource sharing, and computational chemistry.

Cracow Technology Park features the KPT Community Cloud IT platform, a data center for server collocation and other IT devices, film post-production studios, and LivingLab for product research and UX consultations. Lifescience Park Cracow offers facilities like diagnostic imaging, clinical trials, Biological Analysis Laboratory, Chromatography and Mass Spectrometry Laboratory, Quality Control Laboratory, Microbiology Laboratory, NMR Spectroscopy Laboratory, and an Imaging Laboratory.

The "Świerk" Science and Technology Park, part of the National Center for Nuclear Research (NCBJ), includes the Advanced 3D Printing Laboratory, a 3D Scanner Laboratory, a Clean Room, and a Climatic Chamber Laboratory. The Institute operates the Świerk IT Center, HITEC (electron accelerators, particularly for oncological therapy), POLATOM

Radioisotope Center, and the Materials Research Laboratory. In the Płock Industrial and Technology Park, the largest chemical analytical laboratory in Poland and one of the leading industry laboratories in Europe enables the analysis of fuels, petroleum products, water, sewage, soil, and air.

Science and Technology Park in Opole Sp. z o.o. offers services in reverse engineering, CAD design, testing and measurement, and computer simulations. Podkarpacki Science and Technology Park AEROPOLIS houses the Aeropolis Materials Science and Prototyping Laboratory, which includes the Aging Research Laboratory, Rapid Prototyping Laboratory, Metallographic Laboratory, and Materials Characterization Laboratory.

The Białystok Science and Technology Park features a range of facilities in its laboratory: a PET/MR bio-scanner - Monocular Imaging Laboratory, Computer Graphics and Interactive Art Laboratory, 3D Prototyping Laboratory, Electromagnetic Compatibility Testing Laboratory, Biomedical Laboratory, Physicochemical Laboratory, Innovative Metallurgical Laboratory, Cisco Academy at BPN-T, and BaseLAB.

The Gdańsk Science and Technology Park boasts three laboratories: a small wind energy module, a module for testing the dynamics of microturbines and mini cogeneration plants, and a module for testing solar collectors, heat pumps, and hybrid heating systems. This park also offers specialized drone services. The Pomeranian Science and Technology Park Gdynia provides research services in its bio laboratory, specializing in chemical analysis, microbiology, molecular biology, and in vitro plant breeding. Gdynia Park's facilities also include a 3D printing laboratory, 3D measurement laboratory, measurement laboratory, biotechnology laboratory, destructive and non-destructive testing laboratory, measuring instrument calibration laboratory, and wood and metal processing laboratory. The Słupsk Technology Incubator’s 3D Center offers services in 3D printing, 3D scanning, GD&T measurements, and reverse engineering.

Euro-Center Science and Technology Park features a Solar Systems Testing Center, Laboratory for Testing Thermal Properties of Buildings, Laboratory of Processes in Energy-Saving Construction, Photovoltaic Cells Laboratory, Climate and Meteorological Station, and Intelligent Energy Networks Laboratory. IT LOFT Park in Tychy caters to companies in the technology, IT, design, financial, and marketing industries with its laboratories. The Kielce Technology Park includes a LabDesign studio, CNC Center, ICT Center, Energy Science Center, 3D Printing Center, Technology Center, and a Complex of Technology Incubators.

The Elbląg Technology Park has Research and Development Centers: Environmental Quality Center, Metal Science Center, Wood and Furniture Technology Center, and Information Technology Transfer Center. The Olsztyn Science and Technology Park features technological, molecular, and chemical laboratories, along with the Center for Geomatics and Modern Satellite Technologies and the Center for the Propagation of Radio Waves in the Ionosphere. The Science and Technology Park in Ełk houses a Food and Production Environment Research Laboratory.

Poznań Science and Technology Park of the University A. Mickiewicz Foundation provides a broad range of research and analysis services, including ion chromatography for ionic liquids analysis, supercritical carbon dioxide for quantitative and qualitative analysis, elemental analysis of solid and liquid samples, surface analysis with a scanning electron microscope (SEM), fatty acid profile analysis, rheological analysis, chromatographic analysis, thermal analysis, microbiological testing of cosmetics, asbestos fiber testing in water, sewage, and soil, microorganism growth testing, consulting, excavation and expert opinions, solvent extraction, carbon dioxide extraction, tangential filtration of liquids up to 10 liters, cultures in bioreactors, asbestos fiber identification in building materials, freeze-drying, fluorescence microscope imaging, organic remain aging using the accelerator method (AMS), chemical and technological processes, separation, purification and recovery of solvents, spectrophotometry and UV-Vis spectroscopy, supercritical carbon dioxide drying, and synthesis and production of chemical compounds and preparations.

Turek Business Incubator operates the Building Energy Consumption Assessment Laboratory and the Spatial Measurements and Non-Destructive Testing Laboratory. YouNick Technology Park offers modern laboratory and office spaces to companies from the Life Science, medical, pharmaceutical, biotechnology, and related industries, with areas adapted to SANEPID, GMP, GLP, HACAP, etc., requirements.

Table 2.
Specialization of technology parks and business incubators divided into specializations

Industry	Technology park/business incubator
Construction	Wrocław Industrial Park Podkarpackie Science and Technology Park AEROPOLIS, GPP Business Park,
Electromachines, electrical engineering, electronics, optoelectronics, electromobility	Wrocław Industrial Park, Lublin Science and Technology Park, Lifescience Park Cracow, Mielec Industrial Park, Podkarpacki Science and Technology Park AEROPOLIS,
Environmental Protection	Lublin Science and Technology Park,
IT, ICT, IoT, telecommunications, ICT, software	Wrocław Industrial Park, Toruń Technology Park, Lublin Science and Technology Park, Lifescience Park Cracow, Łomża Industrial Park, Euro-Centrum Industrial Park, Technopark Pomerania, IT LOFT Park in Tychy, YouNick Technology Park
Metallurgical industry	Wrocław Industrial Park, Lifescience Park Cracow
Logistics, transport, distribution	Bukowice Industrial Park, Wrocław Industrial Park, Kutno Agro-Industrial Park,
Biotechnology, Organic Chemistry, Pharmaceuticals, Chemistry, Life Sciences, Life Science, waste management,	Lublin Science and Technology Park, Puławy Science and Technology Park, Kutno Agro-Industrial Park, Lifescience Park Cracow, Branice Science and Technology Park, Podkarpacki Science and Technology Park AEROPOLIS, Industrial and Technology Park "Ekopark" in Piekary Śląskie, YouNick Technology Park

Cont. table 2.

High-tech	Lower Silesian Technology Park "T-Park" Bukowice Industrial Park Toruń Technology Park, Lubuski Industrial and Technology Park Bionanopark Łomża Industrial Park Science and Technology Park "Świerk", Płock Industrial and Technology Park Mielec Industrial Park, Tarnobrzeg Industrial and Technology Park Science and Technology Park Poland-Wschód in Suwałki, Gdańsk Science and Technology Park, Pomeranian Science and Technology Park Gdynia, Sosnowiec Science and Technology Park, Regional Science and Technology Center Poznań Science and Technology Park of the University Foundation. A. Mickiewicz, Science and Technology Park of the Koszalin University of Technology,
Sustainable energy, energy, energy-saving technologies, renewable energy	Lifescience Park Cracow, Mielec Industrial Park, Euro-Centrum Science and Technology Park, Euro-Centrum Industrial Park,
Food industry	Kutno Agro-Industrial Park,
Plastics industry	Kutno Agro-Industrial Park, Podkarpackie Science and Technology Park AEROPOLIS,
Machinery	Kutno Agro-Industrial Park, Lifescience Park Cracow
Railway industry, mining, heating	Mielec Industrial Park,
Multimedia, marketing	IT LOFT Park in Tychy,
Space, aviation,	Mielec Industrial Park, Podkarpackie Science and Technology Park AEROPOLIS, Bielsko Aviation, Entrepreneurship and Innovation Technology Park,

Source: Own work based on the websites of the mentioned institutions.

According to the classification of high-tech industries in Poland, technology parks and business incubators can specialize in particular industries (Table 2). To fulfill the purpose of this article and given the extensiveness of the factual material, the study focused on examining the development paths of the best technology start-ups in Poland, awarded in the EEC Startup Challenge.

The EEC Startup Challenge 2023, the 15th edition of the European Economic Congress in Katowice, took place in Poland from April 24-26, 2023, where awards were presented to the best startups in various categories. A total of 213 projects were submitted to this year's edition of the competition. The prize for the winners included a voucher sponsored by OVHcloud, granting participation in the special OVHcloud Startup Program acceleration program for startups, along with a promotional campaign in industry media (Koc, 2023).

In the environmental protection category, focusing on smart energy, raw material use, waste processing, climate technologies, and ecological crops, the winner was Biostra from Katowice. The company offers solutions to modify bio-waste into solid organic fertilizer SOILREN, addressing composting plant issues. During their presentation, the team showcased an innovative concept related to waste processing, which the jury appreciated. The judges also valued the startup's current financing round and its solution to a critical environmental issue. However, SOILEREN does not maintain records of business support (dlahnadlu.pl, 2023).

In the category of automation, industry, robotics, energy, construction, telecommunications, and transport, the winner was ParkCash from Rzeszów. The startup adapts non-urbanized office parking lots for hybrid work by launching a system for booking and sharing parking spaces, as well as providing mobile access to barriers and gates. ParkCash’s application allows employees to reserve parking spaces before leaving for work, reducing stress associated with finding parking and helping to decrease carbon footprints. The jury noted the idea's ease of implementation, potential for widespread adoption, and relevance in the modern economy (Koc, 2023).

ParkCash startup is located in the Podkarpackie Science and Technology Park AEROPOLIS, particularly in the Technology Incubator in Jesionka. As part of the "Expansion of the Podkarpackie Science and Technology Park (PPNT) - stage II" project, an agreement was signed in 2010 with the Polish Agency for Enterprise Development and the Rzeszów Regional Development Agency S.A. under the Operational Program Development of Eastern Poland 2007-2013. This project established four research and development laboratories: three within the Research Laboratory facility for the Rzeszów University of Technology (including the Laboratory of Composite and Polymer Materials for Aviation, the Laboratory for the Application of Information Systems in Diagnostics, and the Laboratory for Computer-Aided Research and Design of Aviation Structures and Alternative Renewable Energy Sources), and one within the scope of the Biotechnology Laboratory for the University of Technology. The project also entailed constructing a Technology Incubator complex with a PPNT Service Center. The project's third stage aimed to strengthen and supplement the research base for enterprise development and increased competitiveness based on innovation ideas by creating the Aeropolis Laboratory, equipped with high-end equipment to provide specialized research services for the industry (AEROPOLIS, 2023).

The best company in the business process category related to management, HR, analytics, logistics, ICT, and cybersecurity was Zonifero. This Białystok-based company boasts its own office management program, transforming spaces to allow employees to choose a convenient work style. The platform interacts with IoT sensors that control building activity in real time, monitoring employee presence, light intensity, humidity, and temperature. Sensors developed by the startup significantly reduce building operation costs and improve communication. The platform also aims to reduce the carbon footprint in office buildings. The jury appreciated the project for the company's knowledge and competence, scalability, and technology, which influence the comprehensiveness and maturity of the solution (www.portalsamorzadowy.pl, 2023). Zonifero was developed within TenderHut, a company specializing in the IT industry and developing modern technologies in areas such as solutions for laboratories, workplaces, and telemedicine (TenderHut, 2023).

The competition also highlighted the best startup in the *client & lifestyle* category, encompassing industries like leisure, trade, sports, customer experience, gaming, e-commerce, edutech, and fintech. Startup Magly was recognized for its platform that creates modern and fully personalized hotel attractions through interactive educational games designed for families. Its innovative controller recognizes player movements and interacts with monitors throughout the facility and various objects. The game operates without VR glasses or phones, utilizing the emerging phi digital trend, which impacts the future of the gaming industry. The company was further rewarded with a trip to Expand North Star in Dubai, the world's largest startup event. Participants at this prestigious event can engage in mentoring sessions, the Supernova Challenge competition, and networking, meeting entrepreneurs and investors from around the world (wkatowicach.eu, 2023). Magly was part of a project by Unicorn Hub, aimed at supporting the development of innovative startups from Eastern Poland through a comprehensive incubation program preparing startups for market entry. Cracow Technology was one of the project partners (UnicornHub, 2023).

Diagendo was recognized as the best company in the *health & biotechnology* category, which includes industries related to medicine, biotechnology, health, pharmacy, and medical technologies. The startup presented an innovative medical device, EndoRNA, for analyzing endometriosis diagnostics using qRT-PCR, a technique popularized in Poland due to the COVID-19 pandemic. The team claims that results should be available within 48 hours of sample receipt, depending on laboratory availability. The jury considered the idea significant as it responds to current diagnostic needs for illnesses and diseases (PTWP, 2023). Diagendo collaborated with scientists from the Medical University of Warsaw, including Prof. Jacek Malejczyk and Dr. Ilona Kalaszczyska from the Department and Department of Histology and Embryology.

At this year's European Economic Congress in Katowice, the finalist of the InCredibles program, initiated by Sebastian Kulczyk, was also selected. The winner was startup Hydropolis, offering solutions and services for running and creating vertical farms anywhere in the world using its proprietary platform and Grow Wizard automation (Koc, 2023). Hydropolis collaborated with EQ Development Wojciech Krajewski and the University of Agriculture in Cracow. A team of scientists from three faculties contributed to the project: the Faculty of Agriculture and Economics, Ph.D. engineer Tomasz Zaleski; the Faculty of Biotechnology and Horticulture, Prof. UR, Ph.D. engineer Anna Kołton; and the Faculty of Production Engineering and Energy, Prof. UR, Ph.D. engineer Jarosław Knaga.

5. Discussion and Conclusion

It can be said that technology parks and business incubators, by creating an innovative environment for the development of companies and technologies, play an important role in shaping the future of entrepreneurship. Technology parks serve as centers for companies from the modern technology sector and are excellent places for cooperation, idea exchange, and synergy creation across various industries. They support the development of startup companies by providing not only workspace but also access to experts, mentors, and financing sources.

Conversely, business incubators offer crucial support to young companies at an early development stage, playing a significant role in reducing the risks associated with starting a business. They provide not just infrastructure, but also the knowledge and experience necessary for effective business management. Incubators are where innovative ideas transform into successful ventures, giving entrepreneurs the opportunity to build sustainable and competitive companies.

The common factor between technology parks and business incubators is the creation of a favorable ecosystem conducive to the growth and development of new enterprises. However, for this model to function effectively, involvement from entrepreneurs, government, educational, and business institutions is necessary. Only through collaboration among these diverse entities can a dynamic environment conducive to innovation, job creation, and enhanced economic competitiveness be established. It is noteworthy that the development of technology parks and business incubators contributes not only to economic growth but also plays a key role in building a society based on knowledge and innovation.

Tabela 3.
EEC Startup Challenge comparison table

EEC Startup Challenge edition	The winning startup	Support provided by selected institutions
EEC Startup Challenge 2021	Warmie (health & biotechnology)	**Park LifeScience Cracow**, diaMedica (medical store), MedInTech (medical store), Epruf (billing operator), Medigent Foundation, Aban Fund, Med App, ProPlus (telemedicine), Nordic Semiconductor (IoT)
	CUX (business process)	No data
	MAB Robotics (new industry)	**Cracow Technology Park**
	Wood Pack (tradition & modernity)	National Centre for Research and Development
	SunRoof Technology (environment)	National Centre for Research and Development
	IDENTT (client & lifestyle)	**Wrocław Technology Park**, National Centre for Research and Development

Cont. table 3.

EEC Startup Challenge 2022	Doctor.One (health & biotechnology)	Movens Capital, VC Atlantic Labs
	Simpl.rent (client & lifestyle)	PZU, otodom, Olx, Black Pearls Venture Capital, KOGITO Ventures
	The True Green (environment)	Created as part of the Green Lanes holding
	ULTRAXIS (modern economy)	**Space Research Center in Warsaw**
	Omniaz (business process)	National Centre for Research and Development
EEC Startup Challenge 2023	Diagendo (helath & biotechnology)	Warsaw Medical University
	Magly (client & lifestyle)	Unicorn Hub launch platform, **Cracow Technology Park**
	Zonifero (business process)	TenderHut company
	ParkCash (modern economy)	**Podkarpacki Science and Technology Park Aeropolis**
	Biostra (environment)	No data

Source: own work based on the websites of the mentioned start-ups.

A thorough analysis of the winners of the EEC Startup Challenge 2023 partially confirms the assumption that the infrastructure of technology parks and business incubators contributes to startup achievements. For comparison, the outcomes of the 15th edition of the competition are compared with those from 2021 and 2022 (Table 3).

One of the distinguished startups, ParkCash, operates within a technology park and business incubator. Startups Diagendo and Hydropolis collaborated with universities in Poland. Magly was part of a startup project, while there is no information about whether Biostra cooperated with any other institution in creating its idea. This suggests that startups or young enterprises often collaborate with institutions that can provide scientific, research facilities, or appropriate financing.

The infrastructure offered by technology parks, business incubators, and universities serves not only as a physical workplace but also as an essential environment conducive to creativity, experience exchange, and business network building. These elements create the conditions necessary for the effective development of startups, enabling them to utilize available resources efficiently.

Additionally, this infrastructure is not limited to office spaces. Access to advanced laboratories, specialized equipment, and experts in various fields is crucial for startups operating in the technology sector. Such resources enable effective research and development, translating into the innovation and market competitiveness of these companies.

Moreover, substantive support, mentoring, and acceleration programs offered by technology parks, business incubators, and universities significantly expedite startup development processes. Access to experienced mentors and business experts helps avoid many pitfalls, increasing the likelihood of success in a competitive market.

Acknowledgements

Publication financed within Mini Research Grants for Poznań University of Economics and Business.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

SOCIAL COMMUNICATION IN SELECTED SATELLITE CITIES OF THE MONOCENTRIC WROCŁAW AGGLOMERATION

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Purpose: The study's main objective was to present the manifestations of social communication in selected satellite cities of the monocentric agglomeration of Wroclaw. The specific goals were: to discuss the city's social communication in the context of its forms and determinants; to define urban agglomeration and monocentric agglomeration; to present the Wrocław agglomeration with its satellite cities, including a summary of demographic data.
Design/methodology/approach: In the introduction, attention was paid to the essence of a satellite city, pointing out the benefits for its residents. Then, using desk research analysis, the social communication of the city was discussed, within which different forms of it were distinguished. In addition, various factors determining this process were detailed in forming the city's social communication, and the creation of mutual relations was pointed out. Next, the focus is on Wrocław as a monocentric urban agglomeration with a brief demographic characterization of its satellite cities. Finally, examples of social communication in selected satellite cities of Wroclaw are presented regarding available communication channels. The above considerations were based on Polish and foreign literature, studying scientific articles, books, and chapters from monographs and electronic sources. The following professional databases were used to gather scientific literature: Google Scholar and ScienceDirect.
Findings: Public communication in satellite cities can bring many benefits. By involving residents in communicating information about events and initiatives in a city, authorities can better understand the community's needs and make decisions in line with their expectations. Websites and social media are critical communication channels between residents and authorities, enabling the rapid and effective transfer of information. It is, therefore, worth investing in developing these communication channels to ensure better cooperation between residents and authorities of satellite cities within the urban agglomeration.
Social implications: The exchange of information between local authorities and residents of a satellite city is crucial for cooperation, understanding the needs and expectations of both parties. Social communication in a city within an agglomeration manifests through various activities, initiatives, signalling problems and joint attempts to solve them.
Originality/value: The treatment of issues treating social communication in satellite cities is based on the literature on the subject, Polish and foreign, enriching the existing body of scientific work on social communication, signalling the author's contribution to developing the discipline of management and quality sciences. The article is primarily addressed to researchers and scholars dealing with urban social communication in a monocentric urban agglomeration. The work may also interest students in management, marketing, sociology, and media studies.

The article's value is the comprehensive presentation of social communication in the city in the context of its various forms and determinants, as well as the analysis of examples of social communication in selected satellite cities of Wroclaw regarding various information channels.
Keywords: satellite city, monocentric agglomeration, social communication, Wroclaw.
Category of the paper: General review.

1. Introduction

A satellite city, otherwise known as a bedroom city, is a city that is self-sustaining in terms of services and employment but at the same time dependent on the nearby metropolitan area for higher education, culture, better-paying jobs, and administration (Encyklopedia PWN, n.d.). A satellite city is called a bedroom city because of the behaviour of its residents, who often travel all day to the central part of the agglomeration - for work or school/college. The benefit of a bedroom city is the taxes paid to the tax office by people working in the agglomeration.

Urban bedrooms are gaining more and more importance, as they are places where people want to live. Reasons for moving out of city centres to outlying areas include the desire to experience peace, commune with nature, and breathe clean air, as well as the excellent availability of recreational areas (Gadziński, 2017). However, the fact that people are moving "out of town" does not at all mean that they are "fleeing" from its area of influence (Twardowski, 2017).

Data from the Central Statistical Office shows that municipalities record the most significant population growth near the largest agglomerations, but the suburbanization process[1] also applies to medium-sized agglomerations. This trend of moving to smaller towns (to the countryside) is evident in the growth of new residential buildings (News4Media, 2023). The following indicates the positive impact of satellite cities' geographical and transportation locations in the central city on the population within large agglomerations (Szmytkie & Sikorski, 2020).

The article's main objective is to present social communication in selected satellite cities of the monocentric agglomeration of Wroclaw. The specific goals are to discuss the forms and determinants of the city's social communication, define urban and monocentric agglomeration, and present the Wrocław agglomeration with brief demographic characteristics of its satellite cities.

[1] Suburbanization, otherwise known as urban decentralization, urban sprawl (Kopecky, Suen, 2004, 2009), or exurbanization (Nie olewamy miasta…, 2019), represents the second phase of urbanization, in which the city grows in population and outlying areas develop. Population migration aims to find a better and more environmentally friendly place to live, while preserving jobs in central parts of the city (Petrov, Marinov, 2020).

Discussing the city's social communication, the author highlighted one-way and two-way, formal and informal, external and internal, and downward, horizontal and upward communication. In addition, various factors determining the process of social communication in the city were listed, with particular emphasis on the role of street composition.

2. Methodology

The literature treating the social communication of the city in the context of a monocentric agglomeration was reviewed using the desk research method. The bibliography includes 62 items from 2020-2023, including scientific articles, books, and chapters from monographs and electronic sources. The following databases were used to collect scientific literature: Google Scholar and ScienceDirect. The literature search in the databases above used various combinations of keywords (satellite city, monocentric agglomeration, social communication, social communication of the City, Wroclaw) using Boolean operators (AND, OR).

3. Social communication of the city - its forms and determinants

There are various definitions of social communication in the literature, and each emphasizes the fact that communication is a process, interaction and exchange, and their magnitude is due to different approaches to the phenomenon and the exposure of other elements. According to (Pyrkosz-Pacyna et al., 2022), social communication is the process of people communicating by creating, exchanging or transmitting information in various social contexts. Social communication is interactive, with the transfer of information in sign and symbolic form and for various purposes. Therefore, the essence of social communication is appropriately reading the transmitted information, which should lead to agreement. Such an agreement can only come to fruition when the participants in communication use the same signs and symbols. According to (Dobek-Ostrowska, 2004), social communication is a communication process between individuals, groups or institutions to exchange ideas and share knowledge, information and ideas. This process occurs at different levels, using diverse means, producing specific effects.

The city's social communication, i.e. the transmission of information about its attributes to its external and internal environment, is the basis for building its identity strategy, which translates into its image. Because the effectiveness of the social communication process determines the image of the city and, therefore, the identity strategy implemented (Stanowicka, 2016).

In the social communication of the city, its various forms can be distinguished (Stanowicka, 2016). First, one-way and two-way communication - depending on whether the sender expects feedback. Two-way communication is more critical and beneficial for the city's local community in integrating residents and shaping positive attitudes of other surrounding entities towards the city itself. Secondly, formal and informal communication can be distinguished. Formal communication on the city-resident line follows a specific plan and according to established procedures, while informal communication goes beyond the established framework. City residents usually prefer informal communication; however, the formal side of communication can sometimes not be bypassed. Third, the city-resident communication framework distinguishes between external and internal communication. Its internal form includes communication with residents and other stakeholders, and its goals are: building local patriotism; legitimizing difficult, unwanted, but at the same time essential decisions on the functioning of the city; promoting pro-social behaviour for the good of the local community. External communication, on the other hand, is expressed through the transmission of information to the city's external stakeholders, and its goals are: achieving a high degree of loyalty among current customers and attracting new customers by shaping a positive image of the city in the marketing environment.

Within the internal and external communication framework, downward, horizontal and upward communication can be considered. Downward communication involves transferring information from the city government to residents, tourists, investors, potential investors, NGOs, and other (satellite) cities. Upward communication, on the other hand, involves the transfer of information from the public/residents to the city government and other stakeholders (internal and external) through the use of wish and complaint boxes, city hotlines, surveys, direct conversations with decision-makers, social media, the city's website. Finally, horizontal social communication means passing messages between city residents, authorities, decision-makers, and other satellite cities of a given agglomeration using similar communication tools and channels, such as social media, websites, phone calls, and in-person meetings.

The city's social communication is a complex issue, mainly because of public participation and the government's focus on the resident's presence in management processes and their involvement and participation in solving the region's problems (Jobczyk et al., 2018). Because in modern social communication, the transfer of information must be followed by the creation of mutual relations, so it seems extremely important to choose the correct form of communication adapted to the specifics of the recipient, and this, in turn, determines the effectiveness of communication (Kalinowska-Żeleźnik et al., 2017) However, if the city's residents are not treated as partners by the authorities, then all means of communication will become tools of manipulation, which may eventually lead to the delegitimization of the authorities in the eyes of the residents. The actions of local authorities should be transparent, ensuring a high level of municipal services, thereby building trust and support among residents. As residents' knowledge of the actions and plans of local authorities increases, so does their involvement in local affairs and their sense of responsibility for them (Wyszomirski, Chruściel, 2015).

In a city, social communication is determined by various factors, such as streets and their distribution, the urban backyard, the socio-economic potential of the central centre and its development, land prices, human resources, the degree of investment in infrastructure, regional and local policies, the locational attractiveness of the suburban rudder and its spatial differentiation, the course of major transportation routes, the economic functions of satellite cities, the spatial distribution of subzones of special economic zones.

The role of street composition in shaping the city's social communication is indicated by (Goch, 2017), listing a number of its advantages:

a. streets are among the most easily identifiable elements of the urban landscape that bind the urban system together;
b. streets perform centripetal functions;
c. streets are legible and memorable elements crystallizing the city plan;
d. streets enable identification and orientation in space, creating view axes;
e. streets are the most potent means of organizing the entire urban complex;
f. streets can be seen as a symbol of the city;
g. streets with coherent architecture, uniting a particular shape of space with movement, creating a specific atmosphere of a given city;
h. streets provide unrestricted movement, comfort and safety associated with traffic;
i. streets create various forms of activity and social interaction contained within the designated space;
j. streets perform integrative, communicative and educational functions;
k. streets provide opportunities for people to be among others, build community, act and interact.

Because the street is also an area of cultural and social activity, it is treated as a concrete space that its users can develop. In response to the slowing down of the growth of cars on city streets, especially in the areas of schools and residential neighbourhoods, the idea of so-called woonerfs, i.e. a combination of car, bicycle and pedestrian traffic, including the introduction of greenery and small architecture into the street space, which enhance its cultural character, has emerged. A woonerf, or urban courtyard, combines transportation and cultural functions and aims to calm and slow car traffic through narrowing road obstructions and speed limits. Such a solution is very beneficial to the local community due to the strengthening of pedestrian and bicycle safety, enhancing aesthetic value, reducing street capacity, redirecting some vehicles to nearby arteries, and increasing travel time through a particular part of the city, a piece of friendly space is gained at the expense of traffic congestion, noise and deterioration of accessibility to neighbouring areas in the city through using urban courtyards (Ochota, 2017).

Other determinants of the city's social communication in the context of the attractiveness of the suburban zone are indicated by the following (Brezdeń, Szmytkie, 2017). They list such factors as the socio-economic potential and development of the central centre, land prices, the degree of investment in infrastructure, and regional and local policies. At the same time, the authors point out that the locational attractiveness of the suburban rudder of central cities is spatially differentiated, heterogeneous in nature, and characterized by varying suburbanization rates. In addition, (Brezdeń, Szmytkie, 2017) also list other locational factors that determine the city's social communication process as a consequence: the course of major transportation routes, the economic functions of centres that are satellite cities of large urban agglomerations, as well as the activities of special economic zones.

4. Wroclaw as a monocentric urban agglomeration

According to (Loibl et al., 2018), an urban agglomeration is a contiguous built-up area shaped by one central city or several neighbouring cities, sharing industry, infrastructure and high-density land use, and open spaces. (Fang, Yu, 2017) point to urban agglomeration as a highly developed spatial form of integrated cities, which can be described from six perspectives. First, from an ecological perspective, the development of an urban agglomeration is treated as a self-organizing process, and its external morphology is the product of the symbiotic growth of all elements. Second, from a statistical/quantitative perspective, a specific spatial volume (population density, urban functions, continuity of spatial landscape) is first identified, and then its characteristics are analyzed third, from the perspective of functional interconnectedness and accessibility. Functional interconnectedness includes the commuting and urbanization rates of outlying regions within the agglomeration.

Meanwhile, accessibility, or the maximum attainable areas within the agglomeration, should be within reach of daily commuting. Fourth, from the perspective of achieving a specific minimum population in the central city/cities. Fifth, achieving a specific minimum population and residential locations in outlying areas. Sixth, meeting the distance criterion from the main city/cities to the most peripheral areas.

Monocentric urban agglomeration, on the other hand, is defined as the formation of satellite cities around a major city. Thus, a monocentric agglomeration is a spatial concentration of settlement units with a high level of urbanization and a strong connection of people, goods, money and information to a central city. Such a metropolitan area includes one large city and separate, functionally related administrative units (Bartosiewicz, Pielesiak, 2014). The characteristics of a monocentric agglomeration are as follows (Abdukholiqovich, 2023): the population of the central city is more than 100,000; the number of urban-type settlements near the central city (satellite cities) is at least three, and more than 10% of the total population of the agglomeration lives in all of them; there is oscillatory migration between the Central City and satellite cities; satellite cities should be within two hours of the central city.

An example of a monocentric urban agglomeration is Wrocław with the following satellite cities: Trzebnica, Oleśnica, Jelcz-Laskowice, Siechnice, Oława, Strzelin, Sobótka, Kąty Wrocławskie, Środa Śląska, Brzeg Dolny, Wołów, Oborniki Śląskie and Żmigród. Wroclaw is a provincial city with an area of 292.8 km² in southwestern Poland in the Lower Silesia province. The city's population is 674,079 (as of 31.XII.2022), with a population density of 2,302.0 people/km² (Polska w liczbach, 2023i). Table 1 presents primary demographic data on the satellite cities of the Wroclaw agglomeration.

Table 1.
Summary of demographics of satellite cities of the Wrocław agglomeration

Satellite City	Area [km²]	Population	Population density [persons/km²]	Distance from Wroclaw [km]
Trzebnica	10.6	13,674	1,288.8	22.6
Oleśnica	21.0	36,683	1,750.1	27.2
Jelcz-Laskowice	17.1	15,474	907.0	21.7
Siechnice	15.6	10,684	683.6	11.2
Oława	27.4	32,997	1,206.0	25.3
Strzelin	12.7	12,319	967.0	43.0
Sobótka	32.2	6,998	217.3	34.6
Kąty Wrocławskie	8.6	7,184	834.4	20.8
Środa Śląska	14.9	9,599	642.5	32.8
Brzeg Dolny	17.2	12,607	733.0	38.0
Wołów	18.5	12,054	650.2	45.9
Oborniki Śląskie	14.5	9,027	624.3	23.1
Żmigród	9.5	6,222	655.6	48.3

Source: own study based on: (Polska w liczbach, 2022b, 2022a, 2022d, 2022c, 2023i, 2023d, 2023g, 2023e, 2023j, 2023c, 2023h, 2023a, 2023b, 2023f).

The total population of Wrocław's satellite cities is 185,522, which, together with the residents of Wrocław, results in 859,601 people making up the monocentric Wrocław agglomeration. The average distance of a satellite city from Wrocław is 30.3 kilometres.

5. Social communication of selected satellite cities of Wroclaw

Due to the volume of the article, it was decided to present the manifestations of social communication only in selected satellite cities of Wroclaw. The key to selecting specific cities was the author's familiarity with them and, thus, his desire to delve deeper into the subject. The following cities were selected for analysis: Kąty Wrocławskie, Trzebnica, Oborniki Śląskie, Oława and Żmigród.

The smallest in terms of area and second in distance (proximity) from Wroclaw, its satellite city is Kąty Wrocławskie. On the city's website, in addition to tabs on public orders, tenders, investments (e.g., road repairs, construction of walking alleys), there is other information, important in the context of social communication, as follows: a survey of the transportation needs of the residents of the Municipality of Kąty Wrocławskie (in the form of an online survey) (Otczyk, 2023); local initiatives as a tool for cooperation between local government units and their residents for joint implementation of public tasks for the benefit of the local community. Within the framework of these initiatives, residents can submit ideas and declare their participation in their implementation, which can be an in-kind contribution, financial contribution or community work (Romańska, n.d.); Senior-friendly municipality - the municipality of Kąty Wrocławskie is systematically and multifacetedly trying to provide support to senior citizens by organizing various forms of assistance: Commune Council of Seniors, Senior's Card, Christmas Eve meetings, funds dedicated to people with disabilities and their caregivers, legal aid point, gymnastics for seniors, classes at the Delfinek swimming pool, the Land of Inspiration Foundation, Box of Life (Urząd Miasta i Gminy Kąty Wrocławskie, n.d.). These are, of course, only some of the proposals on the city's website, and the author of the article, choosing just these selected activities, wanted to draw attention to the fact that the municipality takes into account the needs and expectations of various groups of residents on issues important to them.

Another communication channel for the residents of Kąty Wrocławskie is Facebook groups, of which there are several, and an average of 10 posts are published daily. The most popular of the groups is the public Gmina Kąty Wrocławskie Group, which has 14.5 thousand members, where one can post local announcements, promote one's activities as well as sports and cultural events, and interests, mutually exchange advice and opinions on various topics (Facebook, n.d.-b). On LinkedIn, the municipality of Kąty Wrocławskie does not maintain an official profile, while on Instagram, there is an official account called "Gmina Kąty Wrocławskie," however, it contains a total of only 55 posts, the last of which is from April 10, 2021 (Instagram, n.d.-a).

The third-largest satellite city of Wroclaw (counting from the smallest value) is Trzebnica. Upon accessing the city's tourism website, one's eye is caught by an ingenious and aesthetically pleasing slogan: "Take a break from the hustle and bustle". The site highlights various attractions like churches, monasteries or other notable buildings or sites. The municipality also invites visitors on hiking and biking trips and offers bookmarks for children, including a quiz about Trzebnica or colouring pages to download and print out (*Turystyka - Gmina Trzebnica*, n.d.).

The Trzebnica municipality has maintained an official Facebook profile with 8400 followers since 2010, for which the Promotion Department of the Trzebnica Municipal Office is responsible. The transparency of the page is high, indicating easy access to information about the Trzebnica municipality. The purpose of running the site is to inform residents and the marketing environment of the municipality about all important events, history and development of Trzebnica. The profile is updated regularly, making social communication on the Trzebnica-resident line continuous and attractive. For example, posts from July 2023 included a contest for parents with children for a holiday nursery rhyme; information about the arrival of e-scooters in Trzebnica; the second edition of Trzebnica's Brazilian Culture Days; information about a new guide to Trzebnica; a concert for children by the band "Cherries" (Facebook, n.d.-d).

Trzebnica also operates, since 2010, an official video channel on YouTube (YouTube, n.d.-c), as well as has a Twitter account (The author of the article does not have an account in this medium; hence he cannot determine the degree of timeliness and attractiveness of the profile). An exciting tool for efficient and transparent communication with contractors of the Trzebnica Municipality is the Purchasing Platform, where one can set up a Buyer Profile. It is possible to sign up for contractor groups/types (according to the available list) and then submit bids directly on the page of a given procedure (Open Nexus, n.d.).

In summary, the municipality of Trzebnica has a perfect location and is well connected to Wroclaw via the expressway and railbuses. Its added value is its spa traditions with cultural heritage. Currently, Trzebnica is trying to restore its status as a health resort and communicates this clearly by publishing the history of the spa and the activities carried out today (Gmina Trzebnica, n.d.; Rajfur, 2022; Skulimowski, 2022).

The satellite town of Oborniki Slaskie is located in Trzebnica County, 10 km from Trzebnica. The Oborniki Śląskie Municipal Office maintains the city's official website. Upon entering the site, the slogan is: "I like it here!" (Gmina Oborniki Śląskie, n.d.). In addition to the website, which contains, among other things, announcements for residents, an inventory of monuments and tourist attractions, other social communication channels are Facebook, Instagram and YouTube. Facebook is the oldest, founded in 2012, and the most active medium. This official fanpage of the Oborniki Śląskie City Hall is observed by 9.5 thousand people. Posts are published a second time, on average three times a day, and practically each, in addition to a relevant description, contains an interesting infographic or photos (Facebook, n.d.-a). The second to create an official account on it is YouTube. Since 2016, 155 videos have been published on the channel. The videos do not appear with any specific frequency; only 85 people have subscribed to the channel (YouTube, n.d.-a). The last and youngest in the category of joining is Instagram. The account has been running since 2019, with an average of three monthly posts published (Instagram, n.d.-b).

Another satellite city of Wroclaw, some 25 kilometres away, is Olawa. Information on the Olawa City Hall website shows that the only official social media profile is maintained on Facebook. The city's website does not greet with an exciting slogan but is transparent. In social communication with the municipality's stakeholders, the Oława Social Development Center draws attention. The Center's operation consists of providing rooms free of charge to organizations and informal groups working to benefit the local community (Urząd Miejski w Oławie, 2023). Another initiative aimed at foundations and associations is the "Active Olawa" micro-grant program. The program aims to implement independent educational, cultural and social projects for the benefit of the local community of Olawa and receive funding for their implementation (Urząd Miejski w Oławie, 2023). The voice of residents is essential in the context of public transportation, as they can comment on bus transportation by filling out a dedicated form on the site (Urząd Miejski w Oławie, n.d.).

Twelve thousand people observe the "City of Olawa" official profile on Facebook. It includes an imaginative logo with the slogan "Oława. Good direction." The account was created in 2013, and there have been no changes to the page's name since then. Posts are published systematically, with an average frequency of 5 daily posts. Each entry contains an exciting and elaborate infographic (Facebook, n.d.-c).

"Zmigrod - the municipality from A to Z" - is the slogan that welcomes the website of the municipality of Zmigrod. In addition to the News, the "Discover Zmigrod" tab is noteworthyPalace and Park Complex, Barycz Valley and Biodiversity Gardens (Urząd Miejski w Żmigrodzie, n.d.-a). As a new attraction of the Barycz Valley, the gardens have enriched the Żmigród municipality with another place of rest and recreation for residents and tourists. The area's main attraction is the natural biodiversity clusters(Urząd Miejski w Żmigrodzie, n.d.-b). Particularly noteworthy, in terms of recognition and continued development, is that Zmigrod has one of eight in the world, a unique test track of the Railway Institute. Tr trains use This track to gain the confirmation necessary for safe driving on railroad tracks (Urząd Miejski w Żmigrodzie, n.d.-c).

As part of social communication with Żmigród Municipality stakeholders, official social media profiles are maintained on Facebook, Instagram and YouTube. The Żmigród municipality's Facebook fanpage has been run by the Department of Education, Promotion and Non-Governmental Organizations since 2010, with an average of two posts published daily (Facebook, n.d.-e). Under most posts, there are comments, mostly from residents who want to have a tangible impact on the development of the municipality and the improvement of commuting to Wroclaw. The municipality's account on Instagram was activated in 2017, and information on it appears every few days (Instagram, n.d.-c). The earliest, in 2009, a YouTube channel was established, containing videos related to Zmigrod and events relevant to the municipality's development. The channel is subscribed to by 259 people, and 135 videos have been published so far (YouTube, n.d.-b).

In conclusion, through several communication channels, the satellite cities of Wroclaw selected above are resilient in their social communication regarding their residents and the city's marketing environment. The efficient and systematic publication of social media posts identifies these cities as caring for the common good, integrating with various target groups, and keeping up-to-date on issues important to the region and the entire Wrocław agglomeration. By reading the collected information, it can be deduced that not all of the communication channels of a given city operate with remarkable commitment; hence it would be appropriate to focus precisely on their development, as different target groups prefer different channels.

6. Limitations

This article has several limitations. First, the literature review was based only on two selected scientific databases: Google Scholar and ScienceDirect. This choice may have limited the number and value of search results for relevant items. Second, the literature search used a few selected keywords and their combinations using Boolean operators, which may have omitted other scientific items in a given database. Selected electronic sources were used for the subject matter covered to complete the analysis. Thirdly, due to the scope of the presented analysis (only the Wrocław agglomeration), this article should be treated as a contribution to a more extensive, interdisciplinary research, which would help determine the specifics of satellite cities of other urban agglomerations in Poland. Finally, an essential limitation of the study is the narrowed description of the manifestations of social communication of selected satellite cities of Wroclaw, being, as it were, an introduction and signalling the functioning of these cities using various communication channels - mainly the website and social media. The article in its present form can be treated as an introduction to an in-depth analysis in the future, focusing, for example, on one selected satellite city of the Wrocław agglomeration, starting a series of articles on all other cities.

Despite the identified limitations of the study, this paper can be the beginning of a series of articles on social communication in satellite cities of monocentric urban agglomerations in Poland.

7. Conclusions and recommendations

The main objective of the article, which was to present examples of social communication in selected satellite cities of the monocentric agglomeration of Wroclaw, as well as specific objectives, has been achieved.

Social communication in satellite cities can bring many benefits, both for the residents of these cities and their authorities, in addition to translating into satellite city-urban agglomeration relations. The examples of social communication of selected satellite cities of the monocentric Wroclaw agglomeration given during the analysis indicate that the residents of these cities are highly involved in communicating relevant information about the city's events and initiatives. Websites and selected social media are essential daily communication channels between residents and authorities.

Several practical implications were developed based on the analyzed content of academic and industry items. First, all communication channels used by Wrocław's satellite cities should be kept up-to-date and systematically publish essential information for their residents and other stakeholders. Secondly, the importance of communicating the attributes of a satellite city to its external and internal environment should be frequently highlighted and emphasized as the basis for building an identity strategy for that city. Third, since the effectiveness of the social communication process determines the city's image in its marketing environment, care should be taken to ensure the transparency of communication messages within official social media profiles. Finally, the activities and initiatives of the local authorities of satellite cities should ensure a high level of municipal services, thereby increasing the involvement of residents in local affairs.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

'JUST LIKE THE GOOD OLD DAYS'. THE RATIONALE FOR LEVERAGING NOSTALGIA IN MARKETING TOURIST DESTINATIONS

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Purpose: The paper aims to identify the premises and feasibility of using nostalgia in marketing tourist destinations.
Design/methodology/approach: The study was conducted using a literature review supported by bibliographic analysis and desk research involving available online reports and publications on nostalgic travel trends, nostalgic travel behaviour and nostalgic marketing activities applied in the context of tourist destinations.
Findings: Considerations based on a scientific research review justify using nostalgia references in a destination marketing context. The rationale for using nostalgia in marketing tourist destinations stems primarily from its identified impact on tourist behaviours and the rise of nostalgic trends. The paper determines the feasibility of leveraging nostalgia in tourism destination marketing by identifying possibilities and specific application areas.
Practical implications: The paper indicates the directions for appealing to various nostalgic motivations and triggers. It also identifies the areas of application and multiple possibilities associated with using nostalgia in the marketing of tourist destinations.
Originality/value: The review of previous studies demonstrates a frequent focus on research areas referring to selected segments, types of tourism or specific destinations. This paper's value comes from a broad view of the issues related to leveraging nostalgia for tourist destinations and the incorporation of various aspects of application areas.
Keywords: nostalgia, nostalgia marketing, marketing tourist destinations, nostalgic travel trends, destination marketing.
Category of the paper: literature review, viewpoint.

1. Introduction

In times of uncertainty and change, nostalgic behaviours through references to the past and memories can be a way to slow down, escape from everyday problems and relax. Nostalgia has been of interest to marketing researchers and practitioners for years. Academics dealing with nostalgia in marketing usually refer to various psychological, social and managerial aspects of constructing marketing practices (Rana et al., 2022). Recent studies confirm the positive impact of nostalgia on tourism, which indicates the potential for its use in marketing tourist destinations.

The paper aims to identify the premises and feasibility of using nostalgia in marketing tourist destinations. Based on a literature review and desk research, the author makes theoretical considerations to explain why leveraging nostalgia is justified in a destination marketing context. By identifying possibilities and application areas, the paper determines the feasibility of using nostalgia in marketing tourist destinations.

The research procedure involved two stages. The first was based on a literature review. It allowed us to introduce the concept of nostalgia, its importance in scientific research, and present scientific findings in nostalgia marketing and tourism. The second stage incorporated the analysis of available reports and online publications on nostalgic touristic trends, nostalgic travel behaviours and nostalgic marketing activities applied in the context of tourist destinations. The collection of sources was based on Google search results using keywords such as travel nostalgic trends, travel trends, tourist nostalgic trends, nostalgic travel, retro travel, travel nostalgia, nostalgia trends, nostalgic tourism, nostalgic destinations, retro destinations, and nostalgic places. Based on the analysis of internet sources linked to the summaries emerging from the literature review, the premises and feasibility of using nostalgia in marketing tourist destinations were established.

The author contributes to the discussion on nostalgia in tourism marketing and indicates the rationale for leveraging nostalgia in marketing tourist destinations. The review of previous studies demonstrates a frequent focus on research areas referring to selected segments, types of tourism or destinations. This paper's value comes from a broad view of the issues related to the importance of nostalgia in tourism and the incorporation of various aspects of application areas.

2. Theoretical background

2.1. Nostalgia as a concept and subject of scientific research

Scientists from different cultures and fields of study conceptualise nostalgia similarly: as a past-oriented, social, self-related and bittersweet emotion (Sedikides, Wildschut, 2018). Nostalgia can be defined as a sentimental longing for the past (Sedikides, Wildschut, 2018). Nostalgia combines bitterness and sweetness, as nostalgic memories associated with "good old times" can be combined with feelings of sadness and loss associated with a person being far from that ideal situation (Davis, 1979).

As Turner (1987) suggests, with nostalgia comes a sense of perceived loss, which can relate to four dimensions:

1. Loss of space or time.
2. Lost references and values.
3. Loss of individual freedom and autonomy.
4. Loss of simplicity, authenticity and emotional spontaneity.

Nostalgia involves the desire to move from everyday life to another place or time. This is due to positive associations with the past and negative feelings stemming from the present (Hunt, Johns, 2013). According to scientific studies, linking positive feelings associated with the past to present experiences can make them more pleasant, beautiful and magical (Harper, 1966; Wigmore, Tuxill, 1995).

Nostalgia has individual and social references which apply to its sources and implications. Nostalgia can be rooted in direct and indirect personal and group experiences. Hence, its source can be direct and personal memories, experiences and memories of relatives (parents, grandparents, ancestors), collective experiences or memories resulting from indirect experiences related to books, films, videos, etc. (Baker, Kennedy, 1994; Holak et al., 2006). Based on the origins, the authors propose various typologies of nostalgia, which will be further discussed in the context of tourism.

Regarding implications, nostalgia affects the personal perception of the connection between the past and the present (self-continuity). It also influences the sense of belonging and acceptance (social ties) (Sedikides, Wildschut, 2018). Consumers may engage in nostalgic behaviour to provide or enhance their sense of security, identity, self-worth, self-continuity, belonging and social connectedness (Keskin, Memis, 2011; Rana et al., 2022; Sedikides et al., 2015; Earl, Hall, 2023; Walden, 2022). Nostalgia has attracted the attention of researchers and is the topic of numerous scientific publications.

According to bibliometric analysis using SciVal, 770 publications classified in the "Nostalgia; Reverie; Emotion" topic cluster were published in the Scopus database from 2013-2023 (Figure 1). There has been a noticeable increase in interest in this topic in recent years. Compared to 244 positions in 2013-2017, in the analogical five-year period 2018-2022, the Scopus database recorded 401 publications. It is worth noting that only during the three quarters of 2023 were as many as 125 publications considering nostalgia.

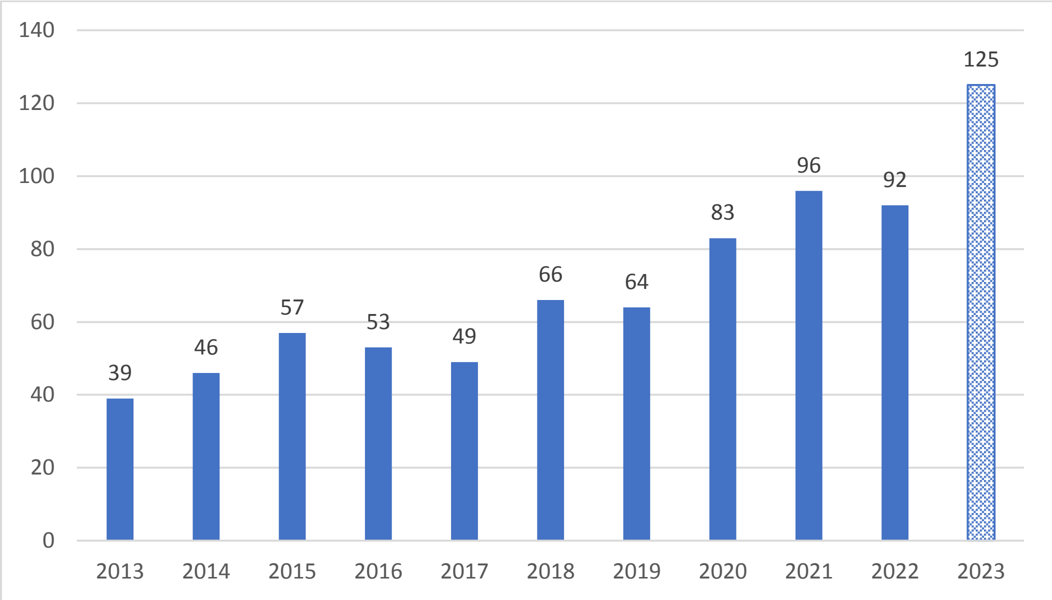

Figure 1. Number of publications in Scopus Database on "Nostalgia; Reverie; Emotion" in the period 2013-2023 (data to 25.10.2023).

Source: based on (*SciVal - Overview*, 2023).

The analysis of publications from recent years allows us to identify areas of scientific interest. Considering 526 publications from 2018-2023, the largest share of bibliographic items in the cluster "Nostalgia; Reverie; Emotion" were scientific papers in psychology (37.33%). During the analysed period, publications classified in the area of "business, management and accounting" contributed 30.1% of all publications on nostalgia (162 items). Among them, there were 75 publications in the area of "marketing" (14.2%) and 55 publications in "tourism, leisure and hospitality management" (10.4%).

2.2. Nostalgia marketing

Nostalgia marketing is a strategic approach to evoke sentimental feelings towards brands and emotional connections with consumers by tapping into their nostalgia. Nostalgia marketing efforts aim to create a sense of comfort, happiness and emotional resonance by associating products or services with positive memories of the past (Youn, Jin, 2017). The findings of various studies indicate that using nostalgia marketing techniques to evoke a sense of nostalgia in consumers leads to an increase in brand attitude and purchase intention (Rana et al., 2020). Nostalgia marketing triggers consumers' nostalgia to inspire subsequent nostalgic behaviour (Cui, 2015). It involves evoking feelings of nostalgia in consumers to enhance brand attitude, purchase intention, and overall satisfaction with products or services (Özhan, Akkaya, 2021).

Leveraging nostalgia marketing requires specifying target groups' characteristics and understanding their motivations, preferences and behaviours related to longing for the past. The serious research and academic debate subject is the relationship of the propensity for nostalgic behaviour to various consumer characteristics (Rana et al., 2022). The results of several studies indicate the relationship between consumers' nostalgic behaviour and their personal, socio-cultural and economic characteristics and situational context (Akagün Ergin, Şahin, 2019; Hepper et al., 2014; Rana et al., 2020; Sedikides, Wildschut, 2022; Yüce et al., 2019).

Seeking to understand and explain the mechanisms involved in consumer nostalgia, researchers undertake studies on the needs, attitudes, preferences, purchase intentions, decisions and loyalty concerning products and brands that evoke memories or references to the past (Chen et al., 2020; Diamantopoulos et al., 2013; Grębosz, 2016; Grebosz-Krawczyk, 2019; Rana et al., 2022; Xia et al., 2021).

The exploitation of nostalgia marketing strengthens the relevance of various products to consumers (Routledge et al., 2011). Adopting strategies rooted in nostalgic connections is essential to creating a genuine attachment to products and brands. This requires identifying nostalgic triggers and addressing target markets' needs, benefits and relationships over time. Nostalgia marketing decisions can be supported by reference to the typology proposed by Kessous and Roux (2008), which includes four moments that can trigger nostalgic feelings: everyday past, tradition, uniqueness and transition.

Marketers seek to evoke nostalgia by linking their offerings to associations with past periods and related experiences, memories or references of consumers. Implementing a nostalgic marketing strategy is usually based on nostalgic products, retro branding, and marketing communications. Marketers can, therefore, offer consumers products from the past, their modifications or versions reminding the ones from the past, and refer to design, graphic motifs or styling characteristics of past periods. In nostalgic marketing communications, brands use messages based on storytelling (flashbacks or references to past events and characters), reuse retro advertising (remasters, remakes, reissues) and incorporate nostalgic themes and elements (images, icons, slogans, jingles, songs, etc.).

2.3. Nostalgia in tourism

Even if consumers cannot literally return to the past, they can recreate it somehow through nostalgic consumption activities. The argument points to the rationality of exploiting nostalgia in tourism, as travel can offer individuals the chance to visit a place that evokes longing feelings (Phau et al., 2016).

Nostalgia can evoke tourists' thoughts and feelings toward "good old times". Tourists may be motivated by direct or indirect experiences and memories of a place. In their travels, tourists may seek to return to places where they have been and with which they are associated by their experiences from their past (Earl, Hall, 2023). Thus, in the private context, we can speak of personal (real) nostalgia triggered by direct personal experiences and memories (Baker, Kennedy, 1994; Holak et al., 2006). Cho (2021) found that nostalgia strengthens attachment and the desire to revisit a place. Therefore, personal nostalgia can prompt tourists to return to destinations to recreate positive memories.

Tourists may also be motivated by interpersonal nostalgia stemming from indirect experience and memory, which may come from family members or significant others (Earl, Hall, 2023; Holak et al., 2006). People then seek to visit places associated with memories derived from family stories. Some researchers identify this type of travel with roots tourism or genealogical tourism (Earl, Hall, 2023; Mensah, 2015; Pelliccia, 2018). Additionally, Zeng and Xu (2021), based on their study examining the relationship between nostalgia, commitment and behavioural intention in diaspora tourism, suggest that nostalgia may directly impact behavioural intentions in specific tourism contexts (Zeng, Xu, 2021).

Referring to nostalgia unrelated to a person's direct experience and reflecting emotions and feelings associated with an imagined past, the authors use the term historical nostalgia or vicarious nostalgia (Chi, Chi, 2022). This type of nostalgia concerns periods for which individuals cannot have personal memories and is generated based on collective experiences or memories of a historical, national and cultural nature. It is mainly experienced when group members observe certain cultural rituals and share similar reactions to commemorate historical events and famous people (Shi et al., 2021).

Tourists with historical nostalgia associate travel with an interest in history, art and architecture and a search for identification associated with historical and cultural heritage, providing them with a sense of continuity. They feel the satisfaction of visiting places and having experiences that allow them to be "transported" back to past times (Shi et al., 2021). Nostalgic tourists are often driven by a desire to express or reinforce their own identity, which is crucial to the positive impact of nostalgia on the experience of visiting a place (Earl, Hall, 2023). Tourists also seem to use nostalgia to satisfy their need to seek authenticity and even find their true selves (Chi, Chi, 2022).

Nostalgia can also result from different people's experiences drawn from the virtual reality depicted in movies, books or other media. Regarding indirect and collective experience, researchers use concepts of virtual nostalgia (Holak et al., 2006; Holak, Havlena, 1998) or pseudo-nostalgia (Hunt, Johns, 2013). Even in the case of indirect experience represented in the media, people can attach strong emotions and affection to imagined times (Shi et al., 2021; Stern, 1992).

Kim et al. (2018) found that nostalgia can influence visitors when choosing film-related destinations. According to the research, nostalgic film tourism provides psychological benefits to tourists and constitutes a destination experience responsive to the ambient surroundings. The study indicates that background memories are the best predictors of perceived familiarity with the films' locations and future travel intentions.

Researchers indicate the potential of nostalgia to influence perceptions of destinations and tourist behaviour in visited places (Chang et al., 2021). Furthermore, the influence of nostalgia has been identified as a mediating factor in tourists' revisit intention (Lu et al., 2022). These findings suggest that creating nostalgic experiences can contribute to increased revisit intentions and destination loyalty.

3. Premises and feasibility of using nostalgia in the marketing tourist destinations

3.1. Nostalgic trends as premises for using nostalgia in destination marketing

The past few years have seen a kind of nostalgia revival, which also applies to travel behaviours and motivations. This insight is supported by the results of the research commissioned by Booking.com (Travel Predictions, 2023, 2022). The survey was conducted on a sample of 24,179 adults who were planning a business or leisure trip in the next 12-24 months. Nearly nine out of ten tourists surveyed (88%) desired a nostalgia trip, and 23% of travellers were motivated by a desire to escape to simpler times. Even millennials and Gen Z travellers who never lived in a pre-digital era declared the desire to "disappear into" the romanticism of the old times. Nostalgic trends are also influencing the increased tourist appeal of destinations popular in the days of tourists' youth. Millennials, for example, often plan to return to places popular in the 1980s and 1990s. Many hope to take their family with them and plan multi-generational "family reunions" (Travel Predictions 2023, 2022).

Previous academic research on the importance of nostalgia in tourism has focused mainly on senior tourists and indicated that nostalgia is one of their most important travel motives (Tung, Ritchie, 2011; Xiong et al., 2022). However, nostalgia is not limited to a specific generation but is a common experience across different age groups (Hepper et al., 2012). Research by the GWI Zeitgeist indicates that younger generations are driving today's nostalgic trends (Harlow, 2023). According to the study, people belonging to Generation Z and Millennials are the most nostalgic. Different generations tend to long for the years associated with their youth. For example, 61% of Millennials feel nostalgic for the 1990s., and 56% of Generation Z representatives for the 2000s. At the same time, as many as 37% of Generation Z also feel nostalgic for the 1990s (Harlow, 2023).

Escapism is a significant trend influencing nostalgic behaviour, motivated by the desire to escape the problems of turbulent times and take one's thoughts away from the present. To escape reality, people are increasingly choosing nostalgic travels and using nostalgia-inducing media, including music, movies, TV series, books, etc. (Is Nostalgic Escapism Driving Consumer Trends?, 2022; Trend Hunter, 2023; Wulf et al., 2022).

The rising trend in tourism is set-jetting, where travellers visit destinations featured in popular films or TV shows. According to survey results published in "The 2023 Global Travel Trends Report". 64% of surveyed tourists declared that they have been inspired to travel to a destination after seeing it featured on a TV show, news source, or movie (American Express Travel, 2023). It is also becoming increasingly popular among tourists to visit retro film locations (Travel Predictions 2023, 2022).

The meaningful trend is also culinary travel related to tourists' search for authentic dining experiences that reflect local and regional flavours and culture, which enable uncovering the deeply rooted historical ties and traditions (These Will Be the Biggest Travel Trends of 2023, According to Experts, 2022). Food-driven travel is growing in popularity among representatives of Gen-Z and Millennials, who increasingly plan their entire trip around visiting specific restaurants or attending food festivals (American Express Travel, 2023).

Nostalgia has become a prevalent trend in social media, with individuals often reminiscing about past experiences and sharing nostalgic content. Nostalgia creates community using shared experiences, with support from nostalgia-related hashtags. The social media seen as generating the most nostalgic trends is TikTok (Harlow, 2023).

Nostalgic consumer and travel trends provide premises for using nostalgia in destination marketing, which includes responding to nostalgic travel motivations and using nostalgic themes in destination campaigns.

3.2. Feasibility of leveraging nostalgia in marketing tourist destinations

Determining the feasibility of using nostalgia in marketing tourist destinations is possible by identifying possibilities and areas of application. In this context, academics often refer to the distinction between historical and personal nostalgia. While scholars agree on the point of such a distinction, there is a lack of consensus on the potential associated with using these two different types of nostalgia in place marketing.

Shi et al. (2021) point out that the accessibility and universality of historical nostalgia imply commercial value in the context of tourism destination management and marketing. Relying on historical nostalgia may be due to its common reference to specific places and their attributes. Shi et al. (2021) suggest using authentic and artificial nostalgic approaches for destination marketing. They refer to the two bases for constructing nostalgia in marketing, as Havlena and Holak (1991) distinguished: products or messages drawn directly from the past and new products and messages that create a past period feeling. The genuine approach appeals to the original tangibles (such as historic architecture) and intangibles (such as traditional customs) associated with a place. The artificial approach is to create new tourist objects that refer to a particular historical period, which is usually ingrained in people's collective memories (Shi et al., 2021). Adequate presentation of the place's attributes and the related tourist offer is essential in satisfying the needs of tourists motivated by the desire to fulfil their fantasies of a different life and wanting to "transport back to times gone by".

Due to different tourists' specific and highly individualised nostalgic references, some researchers suggest that using personal nostalgia in place marketing comes with more significant limitations and challenges (Shi et al., 2021). In contrast, Phau et al. (2016) point to the more significant potential of personal nostalgia in the context of its exploitation in destination marketing. According to their study, only personal nostalgia had a significantly positive impact on individuals' travel attitudes. Phau et al. (2016) suggest that destination marketing to capitalise on tourists' nostalgic sentiments should focus on cues that evoke personal nostalgia. In their view, by appealing to personal nostalgia, marketers can promote a destination as a place where one can "reclaim time" or "return to better times"(Phau et al., 2016). The potential for exploiting personal nostalgia thus comes from the emotions and feelings associated with the atmosphere of the places and the experiences offered there.

Applying nostalgia in marketing requires aligning nostalgic triggers with specific needs, benefits and relation to time (Kessous, Roux, 2008). Destination marketing can address the previously mentioned four important nostalgic triggers: everyday past, tradition, uniqueness, and transition (Kessous, Roux, 2008). The various references that emerge from them can point to directions for using nostalgia in marketing activities.

Referring to the "everyday past", we can appeal to hedonistic motives stemming from a desire to re-experience moments and reproduce activities from the good old days. Using "tradition" in nostalgia marketing involves referencing what is missing in our postmodern society and even making associations with magical moments and meanings. Thus, traditional and authentic products, brands and experiences can be used in place marketing. Bringing back the past can be based on appealing to the "uniqueness" of past moments. We can use nostalgic attachment to symbolic objects to create a bond with people from the past. "Transition" triggers can create nostalgic connections to satisfy the need for freedom and independence and define self-identity. References to and associations with transitional moments and "turning points" can be used in nostalgic marketing (cf. Kessous, Roux, 2008).

According to Su et al. (2024), decisions to choose nostalgic and non-nostalgic advertising depend on the strategies of destinations that appeal to a sense of history or a sense of fashion. Su et al. (2024) indicate that using nostalgic ads and evoking a sense of history is suitable for places that base their tourism on attractions with a long history. In contrast, non-nostalgic ads based on modern tourist attractions are expected to evoke a sense of fashion in tourists. Some discussion points related to these findings can be pointed out. They may arise from the limited understanding of the sense of fashion, typically referring to modern features and impressions. In this context, future research can consider the fashion associated with nostalgic trends and its relationship to the perception of places.

The view that retro images and nostalgia can influence travel intentions is supported by a study by Schibik et al. (2023). Their experiments confirm that visual-based marketing appeals using retro images influence consumers' willingness to travel to popular tourist destinations (Schibik et al., 2023). Therefore, to attract tourists with nostalgia proneness, marketers may adopt customised advertisements with the scenery of old places, old pictures, and other images that create a nostalgic atmosphere (Shi et al., 2021; Zhou et al., 2021). One way to appeal to nostalgic images of places can be using retro-style advertisements, including posters derived from or stylised after those of the past.

Following Ketter (2018), linking destination marketing with experience marketing influences the overall attractiveness of destinations and differentiates their offerings from the competition. By creating meaningful and engaging experiences for tourists, destination marketers can effectively communicate the features of a place while appealing to their senses and emotions. The research findings point to the rationale of leveraging nostalgic experiences in marketing tourist destinations (Chang et al., 2021; Lu et al., 2022; Tsai, 2016). These can include historical reconstructions and thematic events related to past times, such as retro festivals. Sometimes, they take the form of historical spectacle with great marketing potential for destinations, as exemplified by the re-enactment of the Battle of Grunwald (Kapituła Bitwy pod Grunwaldem, n.d.).

Places in their marketing efforts often offer experiences intended in some way to recreate the atmosphere of a place from the past or to build positive emotions about a stay based on a recollection of "the good old days". Marketing nostalgia by offering experiences related to the past can support imagining a potential life in the past ("if I had been there"). Tourists may feel nostalgic for the old days while experiencing food or retro music at historical sites. Nostalgic food experiences often evoke memories and emotions associated with the past, contributing to travellers' overall satisfaction and well-being (Stone et al., 2017). The sense of familiarity evoked by direct and indirect memories can also influence their behavioural responses (Tsai, 2016).

Destinations may offer nostalgic food experiences associated with culinary products that remind us of our childhood, retro-style dishes or more traditional roots. An example is Poznań, the city where the promotion contributes to the tradition of baking St. Martin's croissants and celebrating events in which it plays an important role. An increasingly popular way of marketing places is also creating food trails, which direct travellers to authentic dining experiences that reflect local and regional flavours and culture (These Will Be the Biggest Travel Trends of 2023, According to Experts, n.d.).

As noted, people can also feel nostalgia for places and times depicted in the media. Therefore, film-related nostalgia may provide the potential for marketing places that have served as film locations (Kim et al., 2018, 2019). There is, of course, some risk that fading film memories could make destinations lose their appeal. However, nostalgic consumer trends related to nostalgia for the old days and watching old film productions may influence the refreshing of associated memories or stir up nostalgic film feelings in new audiences.

Places can base their marketing efforts on the popularity of movies shot there. An example is Dubrovnik, which has become one of the most visited destinations thanks to Game of Thrones. The city uses this extensively in its marketing efforts, offering unique experiences of discovering film locations (GoDubrovnik, 2020). Destinations can also take advantage of experiential marketing related to readers' nostalgic returns to places associated with characters from famous books (especially those evoking strong memories of childhood and teenage years).

Nostalgia marketing in the context of places is related to the use of social media. Social media platforms can be used to share old photos, videos and stories related to a destination. In this context, it is essential to encourage people to share their memories and experiences related to destinations, which creates and capitalises on a sense of community and connection. Destination marketing can be supported by those who create so-called throwback content, sharing old photos or videos from their childhood or recreating the past. Influencers can increase engagement through nostalgic challenges or contests encouraging audiences to share their memories or experiences.

New technologies are increasingly applied for nostalgic destination marketing. Video, 360 virtual tours, and virtual reality have become popular ways to experience destinations virtually, evoking various nostalgic emotions. As studies show, compared to other immersive technologies, VR evokes a greater sense of imagery and visit intention (Trisna Jaya, Jaw, 2023). However, AR applications offer solutions that redefine nostalgic experiences of visiting places, engaging tourists by interactively complementing the real world.

4. Conclusions

Exploiting nostalgia in marketing involves linking positive feelings associated with the past to present experiences. The rationale for using nostalgia in marketing tourist destinations stems primarily from its identified impact on tourist intentions and behaviours. According to research, nostalgia can motivate both visiting places and revisiting them to recreate positive memories. Academic research also points to the involvement of nostalgic references in the construction or intensification of inductive individual and collective identities,

The rise of nostalgia in marketing efforts is also linked to nostalgic consumer trends. The past few years have seen a kind of nostalgia revival, and nostalgic attitudes are represented across different age groups. Nostalgia is increasingly expressed in the behaviours of representatives of younger generations, especially Generation Z and Millennials. In responding to nostalgic trends, marketers should identify the nostalgic motivations of various groups and identify opportunities to appeal to nostalgic themes.

Due to the direct and indirect nature of memories and experiences, the literature uses a fundamental division between personal and historical nostalgia. Recognising the potential in capitalising on historical nostalgia may stem from the frequent reference of nostalgia to specific places and their attributes. The potential for exploiting personal nostalgia can come more from evoking emotions and feelings linked to the atmosphere of places and the experiences offered there. Tourists' nostalgia can be related to virtual reality depicted in movies, books or other media. People can tie solid emotions and attachments to imagined times, so destination marketing can also refer to objects and experiences of characters from movies, TV series, books, etc.

In marketing efforts, it seems essential to identify reference points and nostalgic motivations. Insights from tourism market research indicate that nostalgic attitudes are often associated with a desire to return to simple times and the atmosphere of the "good old days". Following theoretical considerations, nostalgia can link the sense of loss or lack associated with the past and the desire to return to the present to the positive feelings associated with the "good old days".

As Turner (1987) states, nostalgia can refer to the loss of space or time, references and values, freedom and autonomy, simplicity, authenticity and emotional spontaneity. The identified nature of the perceived loss can thus provide a reference point for marketing efforts. Applying nostalgia in marketing destinations also requires aligning nostalgic triggers (Kessous, Roux, 2008) with specific needs, benefits and relation to time.

Findings show the importance of creating conditions and offering nostalgic experiences in marketing tourist destinations. Experience marketing usually serves to recreate the atmosphere of a place from the past and build positive emotions about a stay based on the memories referring to "good old days". In this context, place marketers use historical objects and attributes and new technologies that help recreate or recall past times. Both research and marketing practice indicate the importance of nostalgic experiences associated with culinary products that remind us of the "old days".

The findings indicate the importance of social media in driving nostalgic trends and behaviour. People reminisce about past experiences and share nostalgic content accompanied by nostalgia-related hashtags. Social media and new technologies, including virtual and augmented reality, seem essential in leveraging nostalgia to market tourist destinations.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

INFORMATION SECURITY MANAGEMENT IN THE OPERATIONS OF HEALTHCARE ENTITIES

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Purpose: The primary purpose of the study is to indicate the threats faced by medical entities in the context of the growing scale of collection and processing of personal data, including sensitive data. Therefore, it seems justified to attempt to systemically secure the processes related to this.
Specific objective: The main objective formulated in this way required further specification through the scientific and cognitive objective, which was to assess whether the implementation of the ISO 27001:2017 information security system in a medical entity allows for reducing the risk of information security incidents.
Project/methodology: The scope of scientific research defined in this way required the author not only to conduct literature studies, but also to apply appropriate research methods. As part of the considerations, it was decided to use methods such as: statistical analysis of data on the scale of implementation of a standardized data security system in the world and in Poland and the method of scientific description.
Results: The literature studies conducted and the research methods used allowed to demonstrate that the implementation of a standardized information security management system allows, by taking into account the requirements resulting from it, to increase the level of information security in medical entities. Identification of organizational, legal and ICT risks reduces the likelihood of information security incidents, and thus reduces the risk of exposing the healthcare entity to legal liability resulting from violation of the provisions of the Personal Data Protection Act (Journal of Laws of 2018, item 100) and the Regulation of the Parliament European Union and of the Council (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR).
Limitations: A certain limitation faced by the author was the inability to take into account the number of ISO 27001:2017 certificates issued in medical entities both in the world and in Poland. This is due to the fact that certification bodies are not obliged to make such information public. Additionally, a certain limitation is the lack of reporting on compensation awarded by common courts to persons who have been harmed as a result of a breach of the protection of their personal data.
Practical implications: The study proposes a method for estimating risks in the field of information security in the activities of organizations, including healthcare entities. Additionally, the main benefits resulting from the implementation of the ISO 27001:2017 information security management system were indicated and the barriers that the manager of an entity providing health services should take into account were demonstrated.

Originality/value: There are a number of studies in both domestic and foreign literature on the information security system and its importance in organizations. Few authors make the effort to analyze this type of solutions in the context of providing medical services and the problems that must be solved by people managing medical entities.
Keywords: cybersecurity, information security incidents, information security system.
Category of study: scientific and cognitive study.

1. Introduction

Healthcare entities are faced with increasing requirements related to the collection, processing and use of personal data. This is primarily a consequence of technological progress and the increase in the scale of data collection. One should be aware that data regarding both staff and patients is collected not only in paper form, but also increasingly digitally. Therefore, securing access to them is becoming an increasing challenge. Whereas, when records were in paper form, it was enough to secure access to the rooms in which they were stored and the archives in which they were collected. With technological progress and the digitization process, there is a need to secure data stored on disks and servers. Additionally, it should be emphasized that more and more diagnostic equipment such as tomographs, mammograms and magnetic resonance imaging are digital devices that save patients' personal data, including test results, on disks. This requires securing access to them not only in the area of imaging or laboratory diagnostics, but also during their transmission not only to other organizational units within a given entity (e.g. hospital departments) but also to other medical facilities. It is therefore necessary to follow strict procedures for transferring this data only to authorized persons or organizations with which appropriate data entrustment agreements have been previously signed. It must be remembered that in the light of the Act on the Protection of Personal Data (Journal of Laws of 2018, item 100) of May 10, 2018, data regarding health and past diseases are defined as sensitive data, which means that they are particularly protected. Therefore, the role of the healthcare entity should be to take special care to protect these resources. This is problematic because the scope of collected data and the method of their processing are constantly evolving, so in order to have control over them, it seems necessary to implement an information security protection system in the healthcare entity.

2. Literature review

2.1. Cybersecurity incidents

While securing documentation in paper form does not require extensive knowledge and skills on the part of the organization's staff, selecting the optimal IT system, software or coding system for the company is no longer such a simple and obvious matter (Beskosty, 2017, p. 168). The increase in the scale of data collection and the development of information technologies increases the risk of cyber threats. The scale of threats may be confirmed by subsequent reports on the state of cyberspace security in the Republic of Poland. According to experts from the Government Computer Incident Response Team, the number of incidents related to cyber threats is growing and becoming more and more dangerous. A significant group are attacks carried out by the so-called botnets – computer networks infected with malware. The purpose of botnets is to carry out the orders of cybercriminals. The published reports of the Computer Security Incident Response Team operating at the Internal Security Agency show that while 6,236 attacks were recorded in 2018, most of which were attacks carried out by botnets, in 2019 there were 12,405 cyber incidents.

The consequence of this type of incidents is not only disruption of the functioning of the institution caused by blocking access to data, but also a threat to the health and life of citizens in the case of institutions that are part of the so-called critical infrastructure, which includes medical entities. Therefore, it should be assumed that ensuring information security should be included among strategic goals in every organization, especially one that has sensitive data (health condition, past illnesses, political preferences, sexual preferences, criminal record). Over recent years, and especially after the entry into force of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR), awareness of the importance of information and the need to protect it have increased. The increase in the scale of cybercrime requires a methodical approach to ensuring information security. People managing organizations, including medical entities, should consider information as a resource as important as the others at their disposal, namely human, premises, financial and equipment resources (Beskosty 2017, pp. 163-164). Therefore, one of the solutions that can be adopted is the implementation of an information security management system (ISMS) in accordance with the ISO 27001:2017 standard.

2.2. Requirements and meaning of the ISO 27001:2017 standard

The ISO 27001 standard, like other standards, is subject to an amendment process. The currently applicable PN-EN ISO 27001:2017-06 standard replaced the earlier PN-EN ISO 27001:2014-12. These standards were developed based on previously developed protections in the industry. The report A Code of Practice for Information Security Management published in 1992 by the UK Department of Trade and Industry can be considered the beginning of systemic information security. After 3 years, this document was included in the framework of the British standard BS 7799. After four years, in 1999, the first amendment to this standard was carried out, and a year later as part of the so-called "fast track", the international standard ISO/IEC 17799:2000 was published (Urbaniak, 2004, p. 367). This standard defined the requirements for securing organizations and IT systems in various security areas. In 2001, the British Standards Institution (BSI - the name of the United Kingdom's national standards body) issued the second sheet of the BS 7799 standard. This sheet defined the structure of an information security management system, which was consistent with, among others, the ISO 9001:2000 standard. This led to the publication of the ISO/IEC 27001:2005 standard.

In Poland, as well as around the world, a clear increase in interest in the ISO 27001 standard can be observed. This is due to the fact that managers are aware of the fact that the ISMS model, which is a set of good practices, allows for systemic protection of information. It should be noted that the number of ISO 27001 certificates issued worldwide has been gradually increasing since 2006, and a significant increase in dynamics can be observed since 2018. It can be assumed that this is a consequence of the entry into force on May 28, 2018 of the requirements arising from the Personal Data Protection Regulation (figure 1).

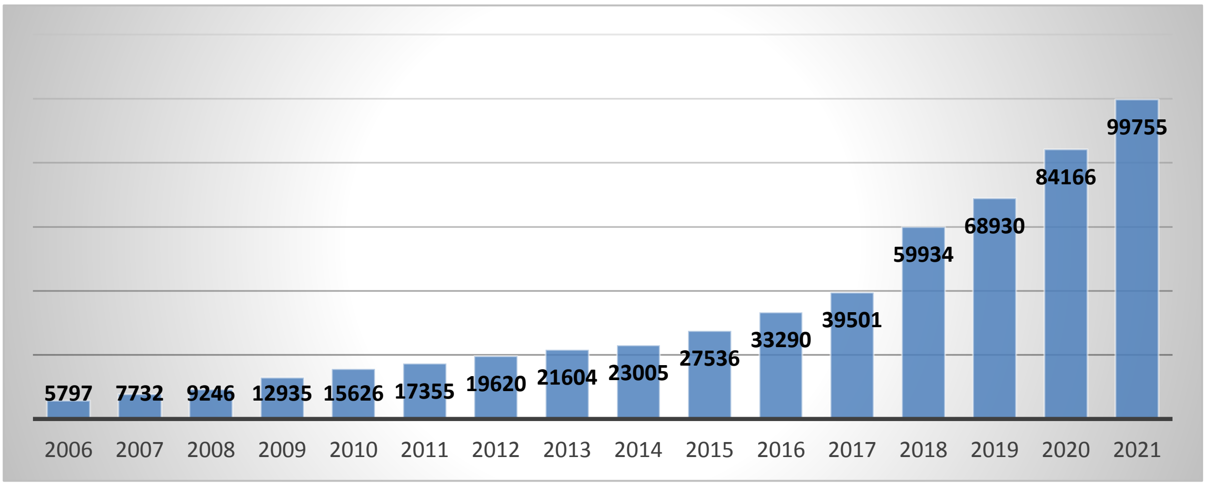

Figure 1. ISO 27001 certificates issued around the world.

Source: The ISO Survey of Management System Standard Certifications for 2007 to 2022.

For comparison, in Poland the dynamics of certificates issued seems to be higher than in the world. This applies especially to the situation in 2018, when this amount doubled compared to the situation in 2017 (figure 2).

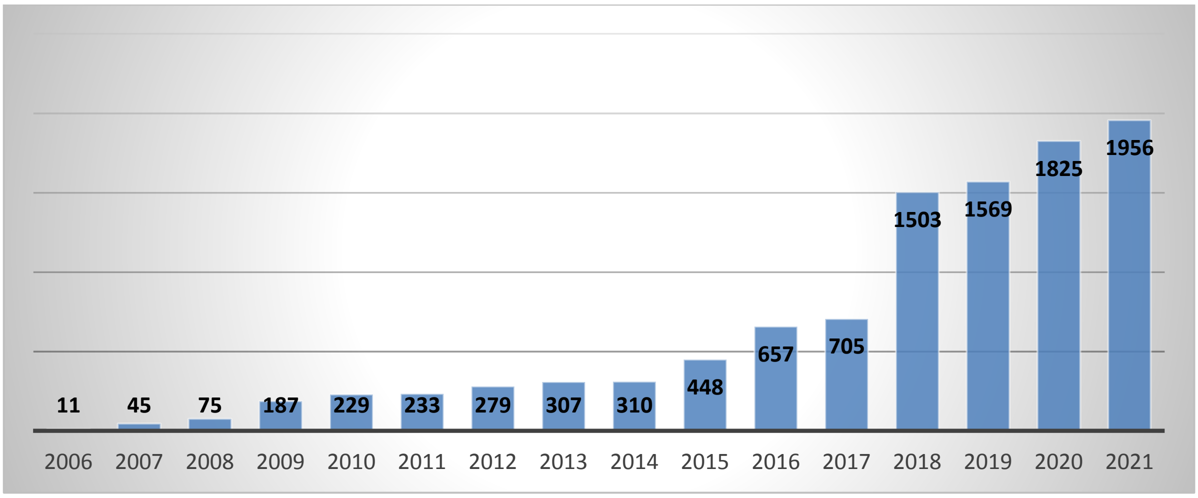

Figure 2. ISO 27001 certificates issued in Poland.

Source: The ISO Survey of Management System Standard Certifications for 2007-2022.

It is worth noting here that system certification is not obligatory and some organizations may implement the requirements arising from the standard without submitting to external assessment. A systemic approach to information protection seems more important. The ISO 27001:2017 standard indicates 3 aspects of information that must be protected:

- Confidentiality.
- Integrity.
- Availability.

Guaranteeing confidentiality means providing access to information only to authorized persons. Maintaining integrity is related to the accuracy and completeness of information, also during its processing. In practice, this means the need to verify the credibility of the information source and control over the changes introduced. Availability, in turn, requires ensuring that authorized persons can use the data when they need it.

Information security, as A Hamrol notes, may be at risk due to the lack or ambiguity of applicable procedures or human imperfection. The sources of threats may lie in management, hardware, software, as well as in the information itself. Threats may therefore come from (Hamrol, 2017, pp. 221-222):

- from a human, e.g. accidental deletion of a file, hacking into the system, including data theft (observations indicate that most problems regarding illegal access to information are related to the lack of knowledge of employees),
- from the environment (flooding, fire),
- from hardware (failure, incorrect configuration).

The aim of activities aimed at eliminating emerging threats, both in the enterprise and in the healthcare entity, is to achieve an organizational and technical level that will allow the development of continuous supervision mechanisms with the possibility of their process improvement (Olkiewicz, 2016, p. 91).

As M. Wiśniewska notes, organizations that want to effectively protect their information should use a systemic approach consisting in holistic management of their own information resources, the infrastructure used for their processing and the risks associated with information security. Thus, many organizations decide to implement a comprehensive Information Security Management System (Wiśniewska, 2009, p. 80).

Following the TQM philosophy in relation to information and IT areas may mean, in organizations such as healthcare entities, the creation of a TIQM (Total Information Quality Management) system, focused on the effectiveness, efficiency and security of information management. Comprehensive information quality management in organizations may be based on formalized and non-formalized systems of conduct resulting from, for example, international standards (e.g. ISO 27001). Adopting the TIQM approach means that managers must take into account (Olkiewicz, 2016, p. 93):

- customer orientation, including patient orientation,
- process orientation, including medical processes and accompanying standards,
- information orientation,
- preventive behaviors,
- continuous improvement.

Actions taken as part of the Information Security Management System should be focused not so much on reacting to information security incidents, but on prevention. Therefore, it is necessary to ensure an appropriate level of awareness in the healthcare facility, which seems to be particularly exposed to this type of threats due to the large number of staff working under time pressure and sometimes under severe stress. Additionally, especially in the case of public entities, financial limitations resulting from the level of contracting and the sometimes negligible involvement of the founding bodies have a significant impact on the possibility of implementing solutions. When implementing data protection solutions, you should also bear in mind that this applies to both paper and electronic documentation.

In healthcare entities, the issues with the greatest risk of information loss are solutions regarding access to premises, documentation and IT systems. Due to the above, the following security areas can be distinguished in medical service providers:

1. Legal and organizational security.
2. Physical security.
3. ICT security.

Ad. 1. With regard to issues related to the principles of handling information, it should be determined what information is most valuable to the medical unit and who is responsible for determining this value. It is also necessary to develop rules for information processing in the context of its marking, storage, destruction, copying and making it available externally. In the light of applicable regulations, it is very important to establish rules for reporting security incidents, which should be understood as an undesirable event constituting a breach of information security. Staff must be aware that incidents can occur in any organization, and reporting and analyzing them is intended to protect the healthcare entity from similar or more serious situations in the future. Guaranteeing legal and organizational security also requires signing appropriate agreements with suppliers, including so-called entrustment agreements. This is important because the provisions of the GDPR assume the so-called joint and several liability and in the event of a leak of e.g. personal data through no fault of the healthcare entity, it may expose it to serious financial consequences. In a healthcare facility, it is also necessary to ensure that the staff only uses legal software and does not install any software on their own, including those that can be downloaded free of charge from the Internet.

Ad. 2. When raising issues related to physical security, the key issue seems to be ensuring the security of the area, facility and rooms. It seems justified to fence the area, install an electronic monitoring system, install anti-burglary foil in rooms, e.g. on the ground floor, and ensure facility protection. A separate issue is the appropriate organization of the reception desk or desk in the admission room. It seems necessary to ensure an appropriate distance between the person served and the person waiting in line. Additionally, remember that the content displayed on the monitor screen and entered into the documentation is not visible to unauthorized persons. The "clean desk" principle should be observed indoors (do not leave documents containing personal data when an authorized person has no control over them). The rooms must have locked cabinets (for documents), and access to them must require formal authorization (key policy). In the case of visitors, e.g. patients, a register must be kept or at least electronic supervision (monitoring). It is also justified to separate a visiting zone, which will guarantee that outsiders will not see who, apart from their loved ones, is currently hospitalized. Guaranteeing an appropriate level of physical security also requires monitoring access to the archive, for which a register of entries, exits and downloads must be kept. Documentation in the archive must be organized, e.g. in marked binders. Indoor temperatures and humidity should be monitored. Another aspect related to this area of security is also supervision over the operation of devices (computers, servers, etc.). First of all, access to them should be prevented by unauthorized persons (key policy). The premises must be protected against flooding or accidental damage (e.g. open window during a storm, equipment located near the air conditioner). In a medical facility, you should protect yourself against interruptions in the supply of electricity by using multiple lines, a power generator and a UPS. The server room should be air-conditioned to protect servers from overheating on hot days. The entire IT infrastructure must also be regularly maintained.

Ad. 3. When analyzing the issue of IT security, attention should be paid to maintaining a password policy. Changing passwords should be forced by the administrator, but there is no need to change them too often, because adopting such a rule may result in their weakening (password authors set one permanent password module and change some of them, e.g. by entering a number appropriate to the next month or year, e.g. stokrotka/01 in January and stokrotka/03 in March). The number of login attempts should be specified by the IT system administrator (logins cannot be shared) and anti-virus software should be guaranteed.

It is important to train staff in the safe use of Internet resources and to possibly disconnect computers that have particularly valuable information stored on their drives. As part of this type of threats, it is also necessary to introduce solutions that guarantee the creation of backup copies with appropriate frequency and to define the rules for the use of external media, the use of which should be limited or reduced to the use only of those that are registered (every fact of copying data is visible in the system). Additionally, it is necessary to meet certain rules regarding the destruction of data carriers and the method of their removal (the principle of, for example, overwriting data on computer disks).

Managing an entity within the TIQM concept concerns quality-promoting activities in the field of information and the overall functioning of the organization. It is impossible to separate the sphere of information security from the sphere of management. Aspects such as (Olkiewicz 2016, p. 94) become important:

- Constant monitoring of information quality (control, analysis and improvement of data obtained, processed and transmitted).
- Transparent, effective and understandable procedures that increase the role of information quality (strengthening the importance of employees, accreditation of accessibility security, etc.).
- Strengthening the information quality factor in the business sphere of the organization (monitoring and eliminating risk, creating appropriate IT and information security policies).
- Developing infrastructural and material resources (within IT) ensuring proper conduct aimed at shaping the quality of information.

It is worth emphasizing that the ISO 27001:2017 standard uses the previously described Deming model (PDCA), which should be applied to all ISMS elements. Approach process management assumes that all areas should be managed in such a way as to transform inputs into outputs.

The process approach to information security management provided in the standard pays attention to the identification, interaction and management of processes, i.e. (Norm PN-ISO/IEC 27001:2017):

- Understanding the information security requirements in the organization and defining information security principles and goals.
- Implementation and operation of security measures to manage information security risk in the context of the organization's overall business risk.
- Monitoring and reviewing the performance and effectiveness of the ISMS.
- Continuous improvement based on objective measurement.

The ISO 27001:2017 standard consists of two parts.

The main part contains requirements that increase the emphasis on the actual functioning of the organizations implementing the system. This is expressed, among other things, in the connection between planning and risk assessment (Chapter 6 of the standard) and the introduction of the organizational context, which forces managers of medical entities to conduct an analysis of the environment, taking into account strategic analysis methods, both in terms of the micro and macro environment.

Table 1.
Structure of the ISO 27001:2017 standard

Chapter	ISO 27001:2017
	Introduction
Chapter 1	Standard range
Chapter 2	Normative references
Chapter 3	Terms and definitions
Chapter 4	Organizational context
Chapter 5	Leadership
Chapter 6	Planning
Chapter 7	Support
Chapter 8	Operational activities
Chapter 9	Performance evaluation
Chapter 10	Perfecting

Source: study based on the PN-ISO/IEC 27001:2017 standard.

In terms of requirements, the ISO 27001 standard places particular emphasis on communication. It is necessary to take into account the type of information transmitted, the recipients of the message and the person responsible for its implementation. Estimating the risk of data leakage is also an important requirement. A sample spreadsheet is presented in Table 3, which identifies the risk within the implemented processes, then indicates its effects, determines the probability of occurrence and finally determines, as a result of the assessment, whether the risk level is acceptable or not. In the case of unacceptable risks, it is advisable to propose actions that will reduce the probability of occurrence or possible consequences.

Table 2.
Information security risk assessment sheet

Ordinal number	Process	Hazard description	The effect of the hazard (E) Scale 1-3	Likelihood of hazard occurrence (L) Scale 1-3	Risk of hazard occurrence R=ExL	Risk level	Comments
	Service in the emergency	Room Data leak	3	3	9	Unacceptable level	RODO training

Source: own study.

Additionally, in the case of risks identified as unacceptable, you can decide to introduce further actions (Table 3), which will allow you to specify the recommended corrective actions aimed at removing non-compliance or undesirable situations.

Table 3.
Plan for dealing with unacceptable risks

Ordinal number	Risk category	Description of the threat	Suggested corrective actions	Person supervising the implementation	Implementation date	Required costs	Implementation monitoring dates	Analysis of the effectiveness of actions

Source: own study.

A very important part of the ISO 27001:2017 standard is Annex A, which presents the areas of required security.

Table 4.
Security in the light of ISO 27001 requirements

	ISO 27001:2017
A5	Information security policies
A6	Organization of information security
A7	Human resources security
A8	Asset management
A9	Access control
A10	Cryptography
A11	Physical and environmental security
A12	Safe operation
A13	Communication security
A14	System acquisition, development and maintenance
A15	Relations with suppliers
A16	Information security incident management
A17	Information security aspects in business continuity management
A18	Compatibility

Source: Based on the PN-ISO/IEC 27001:2017 standard.

The process of implementing the Information Security Management System in accordance with PN-ISO/IEC 27001:2017 can be divided into the following stages (Dobska, Dobski, 2023):

Stage 1 - Preparation

When deciding to implement the requirements of the standard, you must first determine the scope of the system. In practice, this means deciding whether the implementation should concern the entire entity or only selected departments of the plant. The most advantageous approach, considering the scale of possible threats, seems to be to decide on implementation throughout the organization. The implementation process is complex and includes a number of stages that should be properly carried out in order to be considered effective (Wiśniewska, 2009, p. 82):

- preliminary audit,
- asset classification,
- developing a method and conducting a risk analysis,
- implementation of security measures,
- development and implementation of ISMS documentation,
- training for employees,
- internal audit and ISMS review.

The initial audit may be conducted by an employee of the healthcare facility or by a consultant from a consulting company. The involvement of an outsider seems justified because such a person, having experience from other organizations, will be able to notice problems that may not be noticed by an employee who has contact with given solutions in everyday work. The scope of the audit should cover all security areas included in the requirements of the ISO 27001:2017 standard. The result of such an audit is important in determining the scope of work that will need to be performed to prepare the entity for certification. During the audit, a wide range of information sources should be taken into account, such as documentation analysis, interviews with employees and observations. Observations and conversations seem to be particularly important because they will make it possible to verify the level of staff awareness of the importance of ISMS. It is worth observing whether employees do not enter data into the system using the login of co-workers, whether they follow the clean desk principle and whether they lock rooms when they leave them. Additionally, it is worth paying attention to the process of registering for tests or consultations. In addition, documents are an important source of information, including:

- reports from previously conducted audits (e.g. ISO 9001:2015 in the area of infrastructure supervision),
- organizational rules,
- management orders regarding document archiving and IT system,
- documentation in the field of IT,
- documents regarding the rules for handling information in the entity (e.g. office instructions),
- emergency instructions (e.g. actions in the event of fire, power outages, etc.).

During the audit, you can also verify the level of security of the area, buildings and IT systems.

Stage 2 - Development

A very important area of ISMS implementation is the classification of assets (devices, software, data, documents, etc.). First, you should conduct an inventory of assets and determine what the possible consequences of lack of access or possible loss of a given resource will be (e.g. what will be the consequences of a power outage, lack of Internet access, data leakage or failure). As a result of the inventory, you can start categorizing the following types:

1. Critical assets

Assets of this type should be considered those without which the medical entity cannot function, or the loss of which, as a result of providing access to unauthorized persons, would result in significant consequences. This category includes:

- servers,
- database,
- personal data sets (e.g. patients, employees),
- systems and software used in the process of patient service and reporting to the National Health Fund.

3. Valid assets

This type of assets includes devices and systems whose tasks can be performed by other means, but with additional effort and costs, or whose short-term unavailability does not result in serious consequences:

- network devices,
- backup and archiving devices and systems,
- devices supporting the operation of the server room (air conditioners, VPS),
- Alarm Systems,
- access control systems.

4. Core assets

The tasks of these assets can be performed manually with relatively little effort and resources. These types of assets include:

- desktop computers,
- laptops,
- telephones.

A very important aspect related to the classification of assets is to carry out a similar categorization of information. Due to the above, it is possible to isolate confidential information to which a narrow group of authorized persons has access. This type of information includes, for example, information about the health status of patients (test results, past illnesses, etc.). Another type of information would be internal information, which also has access to specific people, but it is a broader circle and is related to current activities. This type of information may include data regarding, for example, medical procedures performed as part of reporting to the National Health Fund. The last type of information is publicly available information. This type includes content available on websites (type and scope of services provided, staff employed in departments) and in information materials such as catalogs or brochures. In addition, it is also worth indicating data storage locations, including periodic and target data. In the case of patients' medical records, such as, for example, disease histories, they are initially stored in the ward where the patient is hospitalized, and after they are closed, they are transferred to the archive as their final destination. This, of course, involves defining appropriate rules for its security (including access restrictions) and transfer (including the time in which it should take place).

Carrying out activities related to the classification of assets allows for:

- improving the flow of information,
- protection against the risk of data being made available to unauthorized persons, including data theft,
- identification of possible causes of failure that may result in data loss.

Stage 3 - Testing

A very important stage of implementing the requirements of the ISO 27001:2017 standard is conducting a risk analysis. A reliable risk assessment requires time and commitment of the entire team. Risk estimation involves assessing the effects, the level of possible damage that may occur in the healthcare facility and its probability of occurrence. Therefore, in the context of risk categorization, it is necessary to determine the consequences related to the violation of data confidentiality, access to data and maintaining its integrity.

The next stage of implementation is to assess the level of security in the organization. This aspect very often exposes entities to costs related to the purchase of appropriate software (licenses) and the introduction of organizational solutions related to physical security (e.g. security, electronic monitoring).

When starting to create ISMS documentation, remember that its level of detail should depend on the nature of the business. Regardless of this level, its formalization must guarantee the definition of rules enabling information security.

The ISO 27001 standard specifies the following scope of documentation:

- documented information security policy,
- ISMS objectives,
- scope of ISMS,
- description of the risk assessment method,
- risk management plan,
- report with the risk assessment process,
- documented information supporting the ISMS,
- documented procedures needed to ensure effective planning, operation and control of information security processes and a description of the measurement of security effectiveness,
- required records (proof of implementation of activities),
- declaration of use.

Effective implementation of the requirements of the ISO 27001 standard is only possible with the participation of employed staff. Therefore, it is justified to conduct training dedicated to various professional groups. The first training, which should be attended by as many people as possible, is general training in the scope of the standard requirements. Thanks to this, employees can learn what the ISMS is, what are the conditions for its implementation and what is their role in the organization that implemented it. Additionally, the person conducting such training should present in an accessible way the benefits that will accrue not only to the entity, but also to individual people employed there. Subsequent training should be dedicated to representatives of individual organizational units. During this training, the structure of the documentation and the principles of its preparation should be discussed. The last of the training series is training for internal auditors, during which they learn the principles of auditing.

The person conducting such training in the form of a workshop should present the rules for developing working documents (e.g. a list of audit questions), preparing an audit plan and preparing an audit report. It may be helpful to explain what nonconformities are and how to classify them. Candidates for internal auditors prepared in this way can proceed to conduct internal audits on their own or with the participation of a consultant. Conducting audits and regular reviews of the ISMS (at scheduled intervals, point 9.3) allows not only to verify the effectiveness of the implemented solutions, but also the possibility of continuous improvement, which allows to increase the level of information security.

Internal audit, in terms of meeting the requirements of the ISO 27001:2017 standard, should be carried out in the following areas:

- documentation analysis,
- verification of the implemented level of information security,
- security of information processing in the context of the applicable Information Security Policy,
- ICT systems,
- personal data security training,
- conditions of ICT and network infrastructure,
- remote e-mail services,
- the advisability of implementing electronic document management.

The culmination of the activities carried out and proof of compliance of the introduced solutions with the requirements of the EN/SO/ICE/27001:2017 standard is the assessment of the certification body. A positive result of a certification audit can be not only a reason to be proud, but also an element that distinguishes a healthcare entity from others operating in a given area.

4. Effects

3.1. Benefits of implementing the ISO 27001:2017 standard for healthcare entities

The information security management system aims to ensure an appropriate level of resistance to disruptions and threats related to information security. As indicated by Malon Group (www.iso,org.pl downloaded on December 30, 2021), the basic benefits of implementing and using an information security management system consistent with the requirements of ISO 27001:2017 include (Dobski, Mikołajczyk, 2023, p. 131):

1. minimizing the risks related to data leakage resulting from the lack of data entrustment agreements (applies to cooperation, e.g. with companies servicing medical equipment recording digital data, such as computed tomography scans, magnetic resonance imaging, mammography machines),
2. the ability to effectively apply for public funds for the purchase of equipment (e.g. servers, UPS) and software (e.g. anti-virus systems),
3. preparing the organization for cybersecurity audits (applies to hospitals that have Hospital Emergency Departments),
4. elimination or reduction of the risk of events related to information security,
5. preparing the organization for events related to information security, including through appropriate procedures, effectively overcoming incidents when they occur - effective response, minimizing their impact on the organization,
6. pro-active approach to information security management by preventing the potential consequences of information security incidents, which may include:
   a) losses resulting from potential compensation for patients and stakeholders,
   b) penalties related to non-compliance with the provisions of law or regulations of civil-legal contracts,
   c) inability to carry out activities or individual processes and activities,
   d) loss of trust of patients and stakeholders - bad public relations, loss of the entity's reputation,
   e) effects resulting from sabotage activities carried out by employees,
   f) material and intangible losses resulting from disruptions in business continuity,
7. the implemented system increases the credibility of the organization in the eyes of patients,
8. improving the efficiency of processes and activities by regulating issues related to employees' access to appropriate and consistent information necessary from the point of view of the duties performed and assigned responsibilities,
9. ensuring an appropriate level of organization's resistance to business disruptions related to information security and effective event management in the event of a threat materializing,
10. meeting the requirements of the legislation in relation to the requirements of insurers,
11. ensuring the security of patient data as a result of a properly functioning information management system,
12. applying a risk-appropriate level of quality of protection for information assets,
13. order in terms of access to coherent and integral information and information circulation,

14. implementation and review of regulations regarding the security of personal data in terms of their adequacy to the organization's situation, the scope of processed personal data, integration with quality regulations,
15. meeting the requirements of the ISO 9001:2015 standard (in the case of entities that have already implemented the system) in terms of adapting the organization to new requirements.

When analyzing the benefits of implementing the system, it is worth mentioning the problems faced by plant managers:

- lack of employee understanding of the essence of the system, failure to follow recommendations and procedures, which results in incidents or undesirable events related to information security,
- downplaying the security area by managers and employees,
- lack of registration of incidents, which consequently leads to failure to implement corrective actions and data loss may result in customer complaints,
- lack of proper risk assessment regarding, for example, the information medium, the software used, the location - where the information is located, the information owner or user,
- lack of appropriate resources to implement the system - increasing costs may result in the temptation to not follow the system's recommendations.

Although security issues do not have to be related to applying for system certification, the standard is a document that enables systematic work on improving IT security.

3.2. Limitations of the implementation of the ISO 27001:2017 standard to healthcare entities

The implementation of the ISO 27001:2017 information security management system requires a number of expenses and staff involvement. For this reason, the person managing a healthcare facility must be aware of certain limitations and problems that must be faced:

- the need to incur expenditure on the purchase of equipment such as servers, disks on which backup copies will be saved, peripheral devices such as code readers, tablets,
- the need to create archives compliant with regulations in which documents will be stored and server rooms in which there will be servers on which digital data will be saved,
- purchase of professional virus software,
- staff training in the field of personal data protection,
- securing rooms and buildings against access by unauthorized persons,
- compliance with the rules resulting from the key policy,
- IT training to make employees aware of the scale of cyber threats.

5. Discussion

The content contained in the study is certainly not exhaustive and may serve as an inspiration for further considerations on cybersecurity and the importance of standardized management systems in increasing the level of data processing security. The protection of personal data of staff and patients is a big challenge faced by managers of medical entities. However, the fact of processing sensitive data imposes a number of obligations on the management staff related to compliance with the rules regarding both their collection and processing, including possible disclosure. The implemented Information Security System and the ISO 27001: 2017 certificate not only allow for a systematic approach to information security issues, but also raise the profile of the entity in relations with stakeholders. This is evidence confirming the high level of awareness in this area. However, the question arises whether in the situation of limited expenditure incurred on contracting services and a number of restrictions faced by the founding bodies of public medical entities (starostas and marshals) it will be possible to finance expenses related to the purchase of necessary equipment and staff training. It should be noted, however, that the implementation and certification of the ISO 27001:2017 Information Security System may be a consequence of cybersecurity audits carried out to which the so-called key entities, including those that have Hospital Emergency Departments (EDs) in their structures. In the author's opinion, the above-mentioned arguments seem to justify the efforts made by the staff of medical entities to implement the ISO 27001:2017 Information Security System.

Conflict of interest

No conflict of interest of the author.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

REGENARATIVE TOURISM – BETWEEN THEORY AND PRACTICE

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Purpose: The aim of this article is to present a shift in thinking in terms of implementing the systems and practices needed to transition to a regenerative approach in tourism. The article aims to provide concrete ways to change thinking and move towards a regenerative paradigm in the tourism industry.
Design/methodology/approach: This viewpoint paper defines regenerative tourism, explores its principles and the possibilities for driving transformational change in tourism. It outlines what a conscious approach to regenerative tourism entails and outlines working principles for regenerative tourism. The article concludes with a discussion of new regenerative thinking and practices.
Findings: Transitioning towards regenerative tourism requires a change in systems, thinking and practice. Regenerative tourism requires a change in socio-ecological awareness in terms of both awareness of the financial benefits to the tourist destination, local society, and the owners of tourist facilities. For tourism must be managed as a complex adaptive system and overcome the challenges of polarisation, which is even more acute in times of economic, political, and social crises. Regenerative tourism requires a deeply committed bottom-up approach that is destination-based, community-centred and environmentally focused.
Research limitations/implications: The article presents a point of view; it is not a typical research article. Nevertheless, it provides a rich field for future research in the implementation of regenerative tourism activities.
Practical and social implications: After indicating the scientific basis of regenerative tourism, the article provides recommendations and courses of action that can be used by tourism entrepreneurs. It can also be confidently used by entrepreneurs in other industries.
Originality/value: This paper is based on both the literature on the subject and the reflections and recommendations of female researchers who share their long experience from different perspectives - economics, environment, and biotechnology - both academically and from business practice. As a result, the study identifies not only recommendations but also good practices that tourism entrepreneurs can apply to run their business in a regenerative way, while taking care of society, the economy, and the environment.
Keywords: Regenerative tourism, Tourism management.
Category of the paper: Viewpoint.

1. Introduction

The 2030 Agenda for Sustainable Development, along with the Sustainable Development Goals (SDGs) is widely criticised for encouraging continued economic growth, leading to environmental devastation and social inequality. Calls for a fundamental change in the approach to the SDGs are therefore growing louder.

One alternative, as it recently seemed, that is now seen as complementary in moving to a higher, more conscious level of tourism development, is regenerative tourism. It differs from sustainable tourism in that it goes beyond simply minimising the negative impacts of human travel. Sustainable tourism focuses on reducing the damage caused by tourism activities, whereas regenerative tourism aims to make a positive impact by actively regenerating the environment and communities. Regenerative tourism represents a long line of regenerative approaches to development, drawing on Western science and available systems of knowledge and practice.

The COVID-19 pandemic can be considered as the factor that most influenced the spread of regenerative tourism. The crisis that was caused by it influenced price increases and the emergence of travel-related impediments. The downturn in the tourism industry provided the impetus to 'build' global tourism anew. With the introduction of the lockdown, many previously overcrowded tourist destinations became deserted. This resulted in the inhabitants of such regions finally being able to breathe. It was then realised how much of an impact tourists had on infrastructure, the daily lives of local people and the environment, and that this was not always a positive impact. However, when post-pandemic tourism began to be considered in order to avoid the mistakes of the past, such as the devastation of the environment through increased tourism, initiatives such as rescuing devastated sites and preventing further negative impacts began to emerge. Regenerative tourism has emerged as a response to these needs.

A universal definition of regenerative tourism has not yet been developed or adopted. Nevertheless, in the literature from niche innovators, several attributes of regenerative tourism can be identified and distinguished that form the conceptual core and enable further conceptual development. Anna Pollock, one of the proponents of the regenerative tourism movement and a tourism expert stated: "Regenerative tourism is the idea that tourism should leave a place better than it was before. Sustainability, in comparison, is leaving something as it is so that it stays the same. In other words - not causing any extra damage" (Pollock, 2016).

Regenerative tourism is based on the understanding that the tourism economy in general, and the destination in particular, are not an industrial production line, but a living, networked system, embedded in a natural environment, subject to the rules and principles of nature.

2. Literature Review

The concept of regeneration dates back to the late 19th century. The first studies on the subject appeared in the 1880s when Howard (2010) wrote 'To-morrow: A Peaceful Path to Social Reform' (Howard, 2010). This seems to have been the first expression of ecological thinking, which assumed harmony of human life with nature and the use of natural (not engineered processes) to ensure the health of the system (Lyle, 1994). Then in 1915. Patrick Geddes published his research on cities understood as living organisms (Geddes, 1915). Geddes introduced terms such as palaeotechnics and neotechnics to distinguish between the industrial era, which led to destructive urbanisation, and the era he predicted would follow the collapse of the industrial era. The above terms were adopted by Lyle (1996) almost 80 years later to distinguish between the industrial era and regenerative technologies.

In 1935, Tansley proposed the term ecosystem as a name for an interactive system of living things and their non-living habitat. He wrote: "we cannot separate them from their particular environment with which they form" ('we cannot separate them from their special environment, with which they form one physical system'). Subsequently, in 1953 Odum published the first textbook on ecology: The Fundamentals of Ecology, pioneering the development of ecology as a modern science, based on the concept of the ecosystem as the fundamental structure that orders nature. Odum's research was an important contribution to the beginnings of the field of ecological engineering (Mitsch, Jørgensen, 1989). Of particular importance in the evolution of regenerative development was the framework given by Krone, a systems theorist and process architect, outlining the four natures of work that are essential to the ongoing ability of any living system to evolve. This framework defines different levels of work in a hierarchy, with work at lower levels focusing on existence (that which has already manifested), increasing productivity and efficiency. Work at higher levels is concerned with potential (what could be but has not yet manifested), introducing the potential for new life and creativity and developing wholeness. Understanding, goals and objectives developed at the regenerative level guide work at other levels (Mang, Haggard, 2016). The basic premise is that all four 'are essential for an individual to sustain themselves in a world that is nested, dynamic, complex, interdependent and evolving'. The framework has been used as an instrument to enable 'practitioners to design an integrated evolution of all work' and as 'a lens to see how and where different sustainability strategies fit and how they can be used when aligned with a regenerative purpose' (Mang, Haggard, 2016).

In the reviewed tourism literature, the earliest use of the term regenerative tourism was applied to ecotourism sites by architectural researcher Owen (2007). She described regenerative tourism as critically engaging with place, making a positive impact, seeing people as part of nature, and linking ecology to socio-political processes. Professor Joseph Cheer (2020) analysed the concept of human flourishing based on systems thinking and interconnectedness with nature. He identified the prioritisation of net positive benefits, including the approach of indigenous peoples who had previously been displaced by colonisation and inclusive development. Similarly, Matunga (2020) explains regenerative tourism as an additive, interconnected and reciprocal approach between people and place for mutual benefit. Finally, Duxbury (2020) describes regenerative tourism as systems-based, aligned with cultural and natural patterns, integrated with local development approaches and positioning tourism practices as regenerative processes.

With an emphasis on economic practices, Sheller (2021) described regenerative tourism as embracing 'alternative, non-capitalist forms of ownership, non-monetary exchange, and beneficial community-based development, calling for a shift away from colonisation, racial inequality, and extractive neoliberal development towards an alternative collective future. Cave and Dredge (2020) look at regenerative tourism as one that encompasses alternative economic practices to mediate between global and local values and create 'wellbeing', and thus the authors what considers a view of regenerative tourism as a holistic view of wellbeing.

Practitioners of the Global Initiative for Regenerative Tourism, on the other hand, emphasise the transformation of relationships between self, other people, and nature to improve the capacity of social and environmental systems. For example, Teruel (2018) describes regenerative tourism as an emerging evolutionary and dynamic understanding that embraces sustainability within living systems and emphasises the human relationship with self, with others and with the earth.

3. Towards regenerative tourism

Regenerative tourism is a concept that is gaining popularity in the tourism industry. It is a philosophy that aims not only to minimise the negative impact of tourism on the environment, but also to actively contribute to the regeneration of local ecosystems, economies, and cultures. Essentially, regenerative tourism seeks to leave a destination better than it was found.

When looking at the definitions of sustainable and regenerative tourism, it is difficult to see a difference between the two. However, it is worth remembering that for many people, sustainability has become a set of actions and guidelines to follow in order not to make the current situation worse. Therefore, sustainability is often seen by certain precepts, and this makes it lose its positive and inspiring overtones and motivation for action. In the meantime, regeneration is a new word, not yet coined, and thus generates more and more interest and positive emotions.

However, the real difference in terminology lies not in their meaning, but in attitude and intention. Regeneration is not just about not making the existing situation worse, but about improving it. Therefore, with sustainability one talks about optimisation and maximisation, while the regenerative approach is all about prospering and flourishing (Figure 1).

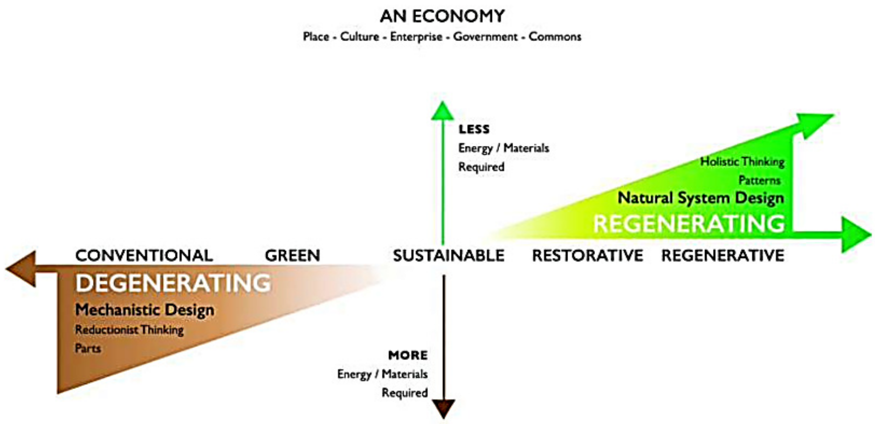

Figure 1. Regenerative Economy.

Source: Fullerton, 2018.

Looking at Figure 1, it can be seen that the starting point in the model is precisely sustainable tourism, which, with the aim of development and adding value, moves from a restorative (Hu et al., 2022) to a regenerative level. The more regenerative tourism becomes, we are talking about thinking holistically and designing natural systems and using certain proven patterns. The counterpoint is degenerating tourism, which is realised at the green level (Furgan et al., 2010) (a narrower form than sustainable) or conventional, favouring the 3S model mentioned earlier, with mechanical design (unthinking, spontaneous), thinking limited to convenience and stereotypes.

Sustainable tourism certainly aims for destination communities to develop and flourish. John Elkington, author of the so-called tripple bottom line (Elkington, 2010), embraces the regeneration movement as an important new way of thinking about sustainability, based on past experience. It is also worth noting that the term 'regeneration' is not loaded with policies that are explicitly associated with 'sustainability'. People who would reject 'sustainable development' because of political views or worldviews may embrace regenerative action and see it as good for their communities. This enthusiasm and motivation to move towards a regenerative tourism model has become a driving force for new initiatives and projects in target groups.

Regenerative tourism can be likened, in a way, to moving beyond the previous standards of sustainable tourism (*Regenerative Tourism - A holiday mind shift beyond sustainability*, 2022), by moving away from focusing only on minimising the negative effects of travel, but also paying attention to the possibility of positively impacting the traveller's environment.

Regenerative tourism can be likened, in a way, to going beyond previous standards of sustainable tourism (Regenerative Tourism…, 2022), by moving away from a focus solely on minimising the negative effects of travel, but also paying attention to the potential for positive impacts on the traveller's environment.

As a starting point for considering regenerative tourism, it is important to define the concept in question and to identify the essence of the components that constitute its foundations. "Regenerative tourism" can be described as a type of tourism oriented towards simultaneous investment in both people, places, and nature, together with support for the long-term regeneration and flourishing of the socio-ecological system (Figure 2). The foundations of the idea of regenerative tourism are identified as (Dredge, 2022):

- a holistic approach, conditioned by the fact that tourism does not operate in a vacuum, but in a continuous two-way relationship with other sectors of the economy and community. So its aim is to understand tourism not only in economic terms, but also in social, environmental, cultural and other terms;
- deep cooperation between state and private actors operating in the tourism environment. Regenerative tourism efforts should be multi-pronged, global, combining different insights and practices. Therefore, one speaks of creative, lateral thinking, aiming to respect diversity and inclusivity (Dziadkiewicz, 2021);
- the sustainable approach of optimising the use of resources, supporting natural diversity, as well as using pristine natural forms in accordance with their original functions, indicates a desire to create a community that cares about the future for the common good (Borawska-Dziadkiewicz, 2023).

Accepting the dynamism and turbulence of tourism. Shying away from standardised solutions to contemporary problems in favour of an individual approach, and towards social and nature-centricity.

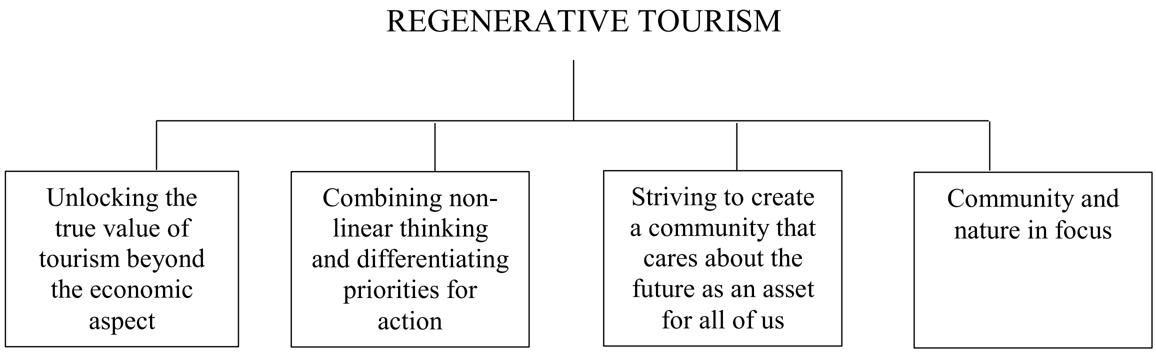

Figure 2. Pillars of Regenerative tourism.

Source: based on Cave et al., 2022.

Linking the concept of regenerative tourism to the business level is not easy, but it is as possible. Today's businesses need to recognise that the environment in which they operate is a living system within a larger living system. This means that their business is part of the whole ecosystem, which requires a change in mindset from tourism entrepreneurs as well. Businesses wishing to use the principles of regenerative tourism to their advantage need to take care of moral considerations, market dynamics and technology - essential elements for achieving regenerative outcomes (Regenerative tourism…, 2022).

Regenerative tourism is therefore holistic in nature. It fosters cooperation and partnership between all stakeholders in local tourism and encourages diversity, in order to avoid extreme dependence of local people on tourism. In the concept of this tourism, local communities are included in decision-making processes in an inclusive and equal space, generating value for the community, as well as responsibility for the environment and the preservation of biodiversity in the tourism location.

4. Regenerative tourism – trends and practical implications

The concept of regenerative tourism aims to provide guests with experiences of possible transformation options so that, on returning home, they are inspired and positive about their trip, while keeping in mind the preservation of local cultural heritage. Holidays, therefore, are meant to give added value, divested of selfishness.

Meanwhile, predictions for travel behaviour in the years ahead, from 2024 onwards, indicate that travel for most of us is not just a form of relaxation according to the 3S (sea, sand, sun) principle, but a catalyst for experiencing life at its best 3E (education, entertainment, and excitement), sometimes the 4 E's - ethnicity - are added to this acronym. Thanks to Booking.com's travel forecasts, it was not only possible to see some changes in tourist attitudes, but also to be able to develop a picture of the local market for the UK, Italy, Germany, Spain, the USA, and Latin America.

One of the trends published by Booking.com is the so-called Reinventing oneself. Almost 70% of travellers believe that they put themselves in a much better light during their holiday than they actually are. While just over 60% of tourists remain anonymous and do not socialise, the rest love to tell untrue stories about themselves, putting themselves in the spotlight. Some even (around 42%) consider hiring a more luxurious car than the one they drive every day. In order to capitalise on this trend for regenerative tourism, the emphasis should be on authenticity and dialogue (instead of creating false stories, travellers can share authentic experiences and stories from the places they visit. It is worth encouraging them to dialogue with the local community to understand the locals' point of view, needs and values. Tourists can be provided with information about the places they visit to raise their cultural and environmental awareness - by organising workshops, lectures, or meetings with local experts on the environment, history, or the arts. It is also worth supporting local businesses instead of large corporations, which can contribute to the profits of the local economy.

And instead of considering renting a luxury car, travellers can choose modes of transport that are more environmentally friendly, such as bicycles, public transport or electric cars. It is also worth encouraging tourists to participate in social or environmental projects, such as planting trees, cleaning up beaches or taking part in local community initiatives.

The need for proximity to water and water activities have always been considered synonymous with holidays (S for sea). Meanwhile, it appears that water is no longer the only way to relax (36% of tourists). More and more people indicate as a destination the search for solace in the form of health retreats (20% of tourists), a good night's sleep, which becomes the priority of the trip for 58% of travellers, or tantric retreats (48%). Travelling into the unknown is also a new leisure option. More than half of travellers are willing to book trips whose destination remains a mystery until they arrive at their destination. 56% of tourists are willing to explore places that are not obvious, off the beaten track, and 34% are willing to travel with strangers. Spontaneity takes precedence over rational travel planning. The majority of travellers prefer to set off without fixed plans, while two-thirds (almost 70%) choose itineraries that can be freely modified according to the weather, the mood of the group and fatigue. Almost half of travellers want to use artificial intelligence in planning their trips, as exemplified by the AI Trip Planner, a planning tool developed by Booking.com. In order to link regenerative tourism to the above trend, it makes sense to introduce so-called sustainable routes that take tourists through unfamiliar, less commercialised areas, supporting local communities and environmental protection. Avoiding major tourist routes can help minimise the negative impact on natural areas. Additionally, working with local communities and tourism businesses to develop programmes that benefit both tourists and local communities, from promoting local culture, arts and crafts to storytelling about local traditions. It is extremely important to educate tourists. In this regard, it is useful to encourage informed travel by providing information on tourist destinations and promoting ethical travel practices. Guidance can be provided to tourists on respecting local culture, environment, and customs. Furthermore, supporting a variety of tourist attractions outside the main attractions helps to balance the influx of tourists. This, too, can minimise pressure on high-tourism areas. Developing local experiences can be done by encouraging travel with strangers, which promotes cross-cultural interaction and the exchange of experiences. Travel programmes that allow tourists to participate in local events and activities can foster closer ties between tourists and local communities. And modifiable itineraries give tourists the opportunity to choose routes depending on factors such as weather, mood or fatigue, encouraging a more flexible and sustainable approach to travel. These activities promote a more sustainable, ethical, and regenerative travel model that contributes to the environment and the development of local communities.

Another trend is to move towards fresh tastes and smells. Here, culinary tourism will lead the way. Almost 80 per cent of travellers want to taste fresh, local dishes. Half of tourists say they want to travel based on specific restaurants or dishes - taking advantage of dedicated trips and culinary journeys, and 61% prioritise trying an iconic dish from a particular region.

A regenerative approach can encourage the promotion of traditional recipes and cooking techniques, protecting a region's culinary heritage. It appears that technology is having an increasing impact on how we enjoy food. Almost 50% of tyrists seek out 'phygital' (physical and digital) meals via VR or AR. This means that the increasingly popular use of technology, such as VR and AR, can be used to create interactive dining experiences, allowing travellers to browse menus, watch the food preparation process or take a virtual tour of a restaurant. The integration of 'phygital' technology allows travellers to have both physical and digital experiences, which can include ordering food online, using a table reservation app, or exploring dishes through VR. While just over 60 per cent of travellers are fascinated by innovative plant-based options such as 3D printed vegan steaks and mushroom 'foie gras'. Meanwhile, interest in innovative plant-based options in the kitchen can foster regenerative tourism by promoting more sustainable eating practices. Regenerative Tourism can therefore include education about local food and culinary culture, the history of food and the impact that tourism has on the environment. In summary, a regenerative approach to food and culinary tourism can include a range of practices that both satisfy travellers' desire to discover new flavours and at the same time contribute to protecting the environment and supporting local communities. The introduction of technology, education and sustainable practices can make culinary travel more conscious and positive for local areas.

In 2024, attitudes towards travel as a destination realising the desire for deeper relationships and self-discovery will also change. Nearly 25% of travellers want to strengthen ties with their partners. Nearly 40% choose getting to know a partner as their destination, and 35% hope to heal a broken heart abroad. Those travelling to meet a partner may be interested in social events, workshops or meetings that enable new relationships. For those who are travelling in the hope of finding emotional peace, consider offerings that combine therapeutic elements with the experience of travelling. This could include meditative retreats, personal development workshops or therapeutic meetings with local experts. Solo travel is becoming increasingly popular year on year (60% of travellers), with slightly more male enthusiasts of such outings than women. As solo travel becomes more popular, it is worth considering how to create travel experiences that allow travellers to explore individually while respecting the local environment and culture. Even parents are joining the trend, with 60 per cent of couples planning to travel without children, prioritising internal development. For couples who plan to travel without children to focus on inner development, travel offerings can be created that support mental and physical health while positively impacting the local community. Regenerative Tourism emphasises the importance of sustainable travel practices. Green travel can be promoted, local environmental and cultural initiatives can be supported, and the negative impact of tourism on a destination can be minimised.

Can affordable luxury be achieved on a limited budget? According to travellers, yes, and what's more, it's one of the main trends. Almost half of parents want to take their children on holiday during school and therefore outside the peak tourist season, and 46% plan to limit tipping. Promoting off-season travel can help to minimise the negative impact on the environment and local community during peak tourism, and supporting educational travel experiences for children, integrates them as future adults to consciously care for the local culture of the place and the environment. 50% plan to take out a loan to pay for their holiday (promoting ethical and sustainable forms of travel finance, repayable in a sensible way to avoid negative impact on the household budget is also a regenerative tourism measure), and supporting pet-friendly destinations and promoting a responsible approach to travelling with pets sees almost 40% of tourists consider taking a pet. The desire to cut costs, associated with the trip, does not make travellers want to give up luxury. 34% of travellers intend to borrow branded clothes and gear from family or friends to avoid paying for luxury products themselves. Develop rental services for eco-friendly clothing (which can be luxurious) and travel gear, with an emphasis on sustainable practices. Over half (54%) would pay for an upgrade in accommodation and 47% are willing to pay extra, on reasonable terms of course, for an upgrade on a flight or train. Encouraging more sustainable options, e.g. direct flights instead of connecting flights, eco-friendly modes of transport, or accommodation with sustainability certificates. Regenerative Tourism involves not only minimising the negative impacts of travel, but also actively contributing to the regeneration of local communities and the environment. It is therefore important that travellers are aware of the consequences of their actions and make informed choices when travelling.

A final trend worth reflecting on is to bet further on sustainability in tourism. In almost all European countries, it is possible to see the identification of a significant group of sustainable tourists who demand certain behaviours from tourist destinations and owners of tourist facilities. More than half of travellers are looking for accommodation that combines comfort with innovative sustainability features. They want the tranquillity of nature indoors (especially the so-called Peace of Minds group) (Dziadkiewicz et al., 2023; Melbye et al., 2022), and 65% want green spaces and plants in hotel venues, restaurants, and places where they purchase tourism products and services (Dziadkiewicz et al., 2023; Melbye et al., 2022). Sustainability is not just a fashionable buzzword - it is a lifestyle. Travellers are interested in green choices (Dziadkiewicz et al., 2023; Melbye et al., 2022) and even more so in rewards for making sustainable choices (60%), e.g. vouchers to be used at the accommodation in exchange for not cleaning the hotel room and changing towels and bed linen throughout the stay. Authenticity is key, with 47% keen to interact with locals in less frequented areas and 44% venturing into less touristy areas.

In the regenerative tourism industry, it is important to shift the mindset from pure profit-based models to regeneration and sustainability. This approach involves adopting a regenerative mindset, that is, prioritising the improvement and regeneration of the planet over pure profit. The steps needed to realise the premise are (Saul, 2022):

- Building an ecosystem business model (Integrating the tourism facility with local ecosystems, co-creating with communities, and understanding the interdependence between local communities, the economy, and the environment.
- Local stakeholders and ecosystem: Making a net positive impact on local ecosystems and supporting the wellbeing of local communities, the environment, and our employees.
- Guest engagement in regeneration: Educate visitors about regenerative practices, provide activities that contribute to the regeneration of the area and encourage experiences that approach nature more slowly and respectfully.

Figure 3 shows the applicability of regenerative activities for a hotel, but they can be adapted to any possible tourism facility.

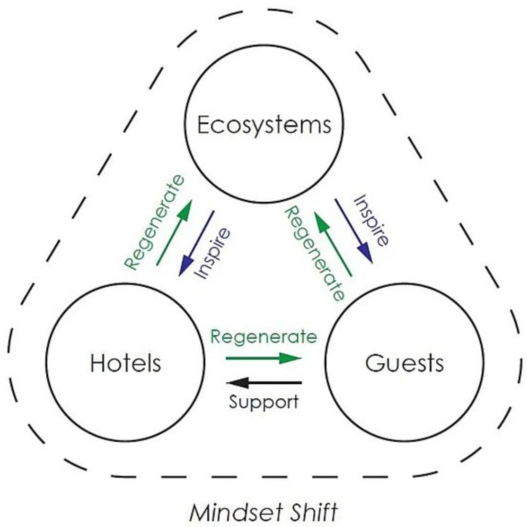

Figure 3. Application of regeneration measures.

Source: Saul, 2022.

Figure 3, developed by Saul, illustrates regenerative hospitality. It consists of three interconnected circles arranged in a triangle and labelled 'Ecosystems', 'Guests' and 'Hotels'. Arrows run between these circles, indicating dynamic relationships. Each arrow has a different term: 'Inspire', 'Support' and 'Regenerate'. These three elements are surrounded by dashed lines, and the arrow marked 'Changing mindsets' points to 'Hotels' and indicates the fundamental changes required for regenerative hospitality.

It can be inferred that regenerative hoteliers can create a circle that benefits local ecosystems and provides a better future than traditional corporate sustainability efforts.

Regenerative tourism can also involve the application of sustainable and regenerative practices within the tourism industry itself. Through the use of regenerative tourism, many benefits can be seen in terms of the environmental impact of these activities e.g. helping to restore damaged ecosystems, conserving biodiversity and mitigating climate change. Tourism infrastructure (hotels, restaurants, spas, and wellness) can use renewable energy sources, reduce water consumption and use sustainable materials for construction. Catering can use local and organic produce, reduce food waste, and use composting to regenerate soil health. For communities, regenerative tourism can bring economic benefits, create employment opportunities, and help preserve local cultures and traditions.

5. Discussions

Reflecting on the future of regenerative tourism in the tourism industry can include a number of important issues concerning both social, economic and environmental aspects.

In the context of regenerative tourism, an important element is the pursuit of sustainability. Reflection should include strategies and practices that contribute to a balance between economic benefits and environmental protection and preservation of local culture. It is worth considering how regenerative tourism can support the education of tourists about local culture, history, and the ecosystem. Education can contribute to a greater respect by tourists for the places they visit, which can influence tourist behaviour. A focus on the physical and mental health aspects of tourists can be crucial in the context of regenerative tourism. Analysing what forms of physical activity, relaxation or therapy are popular in this context can help tailor the offer to tourists' needs.

The future of regeneration tourism may be closely linked to technological advances. The use of modern technology, such as artificial intelligence, virtual reality, or data analytics, can help to better understand tourists' preferences and adapt the offer to their expectations. In the context of regenerative tourism, it is important to take climate change into account. How can the tourism industry adapt to these changes while minimising its negative effects on the environment? Are there innovative approaches to tourism that take into account and counteract the effects of climate change? Regenerative tourism often emphasises local goods and services. What strategies can be put in place to support local communities, artisans, and producers? What are the benefits and challenges of promoting localness in tourism?

The conclusions of the reflections can be used to develop practical guidelines for the tourism industry, encouraging actions that will contribute to the development of regenerative tourism in a sustainable and beneficial way for all stakeholders.

6. Conclusion

The concept of regenerative tourism is not new. Indigenous communities around the world have been practising this form of tourism for centuries. However, it has grown in popularity in recent years. The main reasons are the growing awareness of the impact of tourists on the environment and the need for sustainable travel practices. Interest has increased especially after the pandemic, and tourism then proved to be a regenerative activity in itself for the tourism industry and all those dependent on it.

The aim of regenerative tourism is to have a positive impact on local, social and environmental systems. This can take many forms, but the idea is for the traveller to receive a real local experience and return home not only with memories, but also with new groups of enthusiast friends who will participate with them in projects that bring value to local communities or the environment. Visitors will then be able to be seen in a better light by local people, thus defining a tourism loop that is constructive for society as a whole.

The primary function of regenerative tourism is therefore to prevent the negative impact of tourism on the environment and the lives of local residents. Regenerative tourism can therefore be considered to promote slow life and living in harmony with nature. The COVID-19 pandemic has influenced how leisure time is spent, determining new trends such as mindfulness, taking care of mental wellbeing or paying more attention to what products we use and where they come from. Tourism has its advantages, including enriching the tourist region, but it is also associated with a number of negative factors. Many tourists unfortunately do not care about the environment, infrastructure, cleanliness or even ensuring a peaceful life for the inhabitants of the place they are visiting.

There is more and more talk about sustainable travel, so the fact that regenerative tourism is becoming increasingly well-known and widespread should not surprise anyone. It is what enables the growth or regeneration of an area or environment. By practising regenerative tourism, not only do we not leave a negative footprint, but we have a positive impact on the places we visit.

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Errata to the article

The text was written without properly edited references

Page	Line		There is	There should be
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202	25	15	(…) industry.	(…) industry (Russel, 2023)
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200	25	15	(…) adopted.	(…) adopted (Bellato et al., 2022)
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202	11	29	(…) future.	(…) future (Bellato et al., 2022)
202	14	26	(…) wellbeing.	(…) wellbeing (Bellato et al., 2022)
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202	20	20	(…) earth.	(…) earth (Bellato et al., 2022).
205	20	18	(…) acronym.	(…) acronym. This subchapter of the literature review on regenerative tourism is based on a published report by one of the largest commercial intermediary portals Booking.com (Travel Predictions 2024. Retrieved from: https://www.booking.com/c/trends/travelpredictions2024.html?aid=318615;label=New_English_EN_PL_267673088651RuDzSuCfvuqsEYM9Ub_vAS634117824687:pl:ta:p1:p2:ac:ap:neg:fi:tidsa-55482331735:lp9067393:li:dec:dm:ag26767308865:cmp394949905;ws=&gad_source=1 &gclid=CjwKCAiA-P-rBhBEEiwAQEXhH3sPKyjJdV0vqBl2qauBueZFtd0XF24YC5k7kwEJnV7YkJDT2_VqWxoCwZIQAvD_BwE, 17.11.2023.
210	30	4	(…) centuries.	(…) centuries (Russel, 2023)
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211	3	35	(…) it.	(…) it (Russel, 2023)
211	8	28	(…) environment.	(…) environment (Russel, 2023)
211	9	29	(…) whole.	(…) whole (Russel, 2023)
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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

IDENTIFYING TARGET GROUPS FOR WELLBEING TOURISM: ASSESSMENT OF DIFFERENT SEGMENTATION APPROACHES

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Aim: Recently, there has been a significant increase in interest in the concept of wellbeing tourism. This is true both among tourism entrepreneurs looking for inspiration to best meet the needs of their customers and among tourists who, when travelling, want to satisfy the needs of their body, mind and soul, and ensure the environmental, economic, and social sustainability of the destination visited. The aim of the study is to present target groups of wellbeing tourism, the so-called wellbeing tourists, and to describe good practices in the form of amenities and inspiration for tourism facility owners.
Design/methodology: The character of the objective required the Authors to conduct a literature study, as well as to use appropriate research methods. Within the framework of the considerations carried out, it was decided to use a questionnaire survey and individual in-depth interviews (IDI) as research methodology.
Results: The survey of 261 respondents revealed that Polish tourists can be grouped into three segments: Peace of Minds, Curious Explorers, and Sustainable Idealists. Although the majority of travellers are looking for relaxation and regeneration during their holidays, the goals of active sightseeing and gaining new experiences are also important. Preferences for accommodation vary, but agri-tourism and eco-friendly hotels are increasingly popular. In terms of sustainability, although almost half of the respondents do not pay attention to environmental issues, the results suggest significant future changes.
Constraints: Tourism experiences can improve the wellbeing of residents and tourists, and wellbeing in turn can be a creative opportunity for innovation in destinations. The research, as presented in the article, focused mainly on tourists, with a noticeable lack of research on positive psychology variables targeting local communities and tourism workers.
Practical implications: The characteristics of wellbeing tourists and the described good practices in serving them (description of possible facilities and inspiration for entrepreneurs) can help the tourism industry (accommodation, food, products & services) to prepare an appropriate offer, profiled for this type of customer.
Originality/value: There are a number of studies on sustainable and slow tourism in both domestic and foreign language literature. A growing number of studies also deal with wellbeing tourism. Few authors, however, make the effort to combine the theoretical framework with a practical element, trying to communicate good practices of the tourism industry, based on an in-depth analysis of the target groups.

Keywords: wellbeing tourist, wellbeing tourism, behavioural segmentation, wellbeing target groups, SB WELL project.
Elaboration category: literature review, viewpoint, research paper.

Introduction

In 2015, the United Nations launched the 2030 Agenda for Sustainable Development with 17 goals to change the world. The overall aim of this agenda was (and still is) to promote a more peaceful, resilient and equitable world, with a view to the sustainability of the planet (The Lancet Public Health, 2020). A number of the Sustainable Development Goals (SDGs) address health and wellbeing and make it a priority for all ages (The Lancet Public Health, 2020; Santos et al., 2020). The topic of wellbeing has thus become one of the more frequently discussed topics in various forums ranging from politics to science and business. Interest in sustainable tourism has also increased significantly. Today, wellbeing tourism, often confused with sustainable tourism and slow tourism, has developed.

As research indicates (Lindell et al., 2022; Björk et al., 2011), the concept of wellbeing tourism differs in its framework from sustainable, medical, health and wellness tourism, but draws on their principles. Researchers have begun to explore wellbeing more broadly than just through the lens of Environmental Protection and Enhancement, Social Progress and Economic Development. Research papers began to emphasise the emotional and psychological aspects involved in achieving a society's wellbeing. Wellbeing has begun to be seen as a practice or process associated with living well (Buzinde, 2020). Such interpretations of wellbeing that include body, mind and spirit (Smith, 2003; Smith, Puczko, 2009; Lindell et al., 2022) are increasingly seen as important in the paradigm shift that emphasises healthy lifestyle choices (Cassens et al., 2012).

Working on measures to improve tourism, wellbeing was considered a natural step that can support innovative offerings, tourism experiences and lead to tourism competitiveness (Garcês et al., 2020). This is because tourism creates relationships between three main groups of actors: tourists, destinations (local) and stakeholders and employees. Ensuring a balance between them is crucial for the continuous development of the industry, for the best satisfaction of tourists' needs and increased profitability. Building tourism experiences based on wellbeing can improve the wellbeing of locals and tourists, and wellbeing itself is a trigger for innovation in tourism destinations (Garcês et al., 2018).

With this in mind, tourism service providers are looking for information on how to increase the wellbeing of tourists and inspiration on how the principles of wellbeing tourism can be used to best meet their expectations.

1. Methodology

The basis for the research presented in this article was the work carried out in a Swedish-Danish-Polish-Lithuanian-German team within three projects on wellbeing tourism[1]. The definition of wellbeing tourism prepared by Dr Lali Lindell, a researcher in wellbeing tourism, was used to conduct the analysis on Polish tourists travelling in the spirit of wellbeing. The definition reads "A specific type of tourism intended to promote and maintain a positive state of health of the body, mind and soul, and that is composed of products and services drawn upon a sustainable and harmonious interaction with the surrounding environment and community" (Lindell et al., 2022, SB WELL project – the Good Practice report). The concept of wellbeing tourism defined in this way is based on six aspects: environmental, social, and economic sustainability and the wellbeing of the body, mind and soul being an outcome and integral part of the tourist trip. In a broader sense, wellbeing tourism means:

- On the environment: reducing waste and pollution, using clean transport and caring for natural heritage and biodiversity;
- On the social aspect: cooperation and building positive interactions with others, ensuring good working conditions for employees and equal treatment;
- In economic terms: co-creating and sharing resources; and taking responsibility for one's actions;
- For the body: taking care of the physical health and pleasure of both guests and hosts.
- For the mind: striving for peace of mind, clarity, and creativity through our actions, behaviour and communication.
- For the soul: Supporting people in their quest for freedom, joy, and empowerment.

Wellbeing tourists are people whose travel motives are oriented towards wellbeing tourism products and services. For each target group, all the aspects presented above are important, but they differ in importance and do not define the segments equally. Environmental, social and economic aspects are particularly important for Sustainable Idealists. For Curious Explorers, environmental, body and mind experiences are prioritised. Meanwhile, Peace of Minds will focus on body, mind, and soul.

The basis for the research and starting point for the considerations presented in this article was a report entitled 'Wellbeing Tourists. Target groups for wellbeing tourism' developed by the Danish company Sorsoso Strategy & Advice in December 2019 on behalf of Dansk Turisme

[1] Seed money project: "Sustainable tourism for wellbeing in the South Baltic region (PRE SBWELL)". No. 19757/2016, implemented in the years: 1.08.2016 - 31.03.2017 under the auspices of the Swedish Institute (Sveska Institutet); Second seed money project: "Sustainable tourism for wellbeing in the South Baltic region (SB WELL)", number STHB.02.01.00-SE-S052/16/Ika, implemented from: 1.09.2016-31.12.2016 within the framework of the Interreg South Baltic Programme; and the regular project: "Wellbeing Tourism in the South Baltic Region - Guidelines for good practices & Promotion (SB WELL)", number STHB.02.01.00-SE-0137/17, implemented in the years: 1.09.2019-31.12.2022, under the Interreg South Baltic Programme. All projects were coordinated by Dr Lali Lindell from Linnaeus University, Sweden.

Innovation (Project Partner of SB WELL). This report contains the results of observations of Swedish, Danish, and German tourists in terms of spending their leisure time in the spirit of wellbeing. Due to the lack of Polish data a characterisation for Polish conditions was not carried out.

The study by Sorsoso Strategy & Advice (2019) proposed seven target groups for wellbeing tourism. Research throughout the SB WELL project showed however that there are three of them that are most relevant in the context of wellbeing tourism in the south Baltic region. These are:

- Peace of Minds.
- Sustainable Idealists (the name of this group was modified from Green Idealists since social and economic sustainability also are of importance to this group).
- Curious Explorers (the name of this group was shortened from Curious Nature Explorers since Culture is equally important to them as Nature).

Based on the above report, an analysis of Polish tourists was carried out. For this purpose, for the duration of the regular project, i.e. 2018-2022, the qualitative research was conducted in the form of individual in-depth interviews (IDIs). Individual in-depth interviews consisted of a conversation between two people during which information on the purpose of the study and in-depth knowledge of the topic was sought. It was decided to use this method because it was necessary to obtain more in-depth information (Maison, 2007), based on independent expert opinion. It was also desired to eliminate peer influence between respondents (IMAS International, n.d.).

In addition, an online survey was conducted in the months of August-October 2023 to which people were invited who declared themselves to be wellbeing tourists. The selection for the survey was of a convenience, non-random nature. The vast majority of respondents were aged 18-26 (72%), mainly from cities with more than 200,000 inhabitants (44%). The prevalence of female respondents (almost 80%) over male respondents (20%) was significant. The education of the survey participants varied. The largest group had tertiary education (35%), followed by secondary education (34%) and a completed bachelor's degree (30%). This survey was followed by an identification of the target groups in wellbeing tourism for Poland.

2. Attitude-based segmentation of wellbeing tourists

As Garcês acknowledges "(...) it is possible to have many directions and starting points in wellbeing. However, it makes sense for research to move towards new areas, and eudaimonic wellbeing seems a natural approach, as it is a concept related to the idea of personal fulfilment and development that people seek" (2020, p. 113). The timing of the pandemic, the economic crisis, the turmoil in Europe and other negative events have had serious consequences for society, the environment and human health and wellbeing (Passavanti et al., 2021; Abbas et al., 2021). These events and conditions caused people to experience uncertainty and fear, increased stress, and vulnerability, resulting in a loss of psychological wellbeing (Paredes et al., 2021). In this situation, people began to feel the need for calm environments, tranquility, and relaxation. Thus, behavioural patterns changed, and tourists turned to more secluded places, with an offer rich in outdoor or nature-related activities and began to choose relaxing experiences in domestic destinations rather than explore distant exotic countries. Crises, i.e. lockdown unemployment, the COVID-19 panic, and the lack of social support have not left those working in the tourism sector indifferent (McCartney et al., 2021; Pioch, et al., 2022). In fact, these factors are considered key threats to the perceived wellbeing of tourism workers (Chen, 2020).

The key to a company's success is to focus on the right target market and to understand the needs of its customers - its target groups. Insight into the right market segments allows a company to prepare its offerings, adjust marketing activities and communication strategies to fully meet the needs and desires of its audience possible, to remain true to its values and to remain true to its mission. Selecting the right target group also makes it easier to reach the right customer at the right time and in the right place.

In today's highly competitive market, even more so in a market as demanding as tourism, understanding customers is crucial to the success of any marketing activity. Traditional segmentation methods based on objective criteria, i.e. age, gender, place of residence, etc., provide a limited insight into the profile of customers, and lacks means to identify the motives behind their behaviour and preferences. This is because the mindset and requirements of travellers are changing. There is a growing awareness of sustainability and the negative impact of tourism on the environment and local communities. At the same time, travellers are increasingly seeking to improve their personal wellbeing to reduce stress, improve health and quality of life, bring joy, and connect with their inner self and others. The number of travellers for whom sustainability, harmony and balance of body, mind and soul matter is growing rapidly.

The main difference between segmentation based on objective data and that based on attitudes is the focus on emotions and perception, thus the identification of target groups is based on emotional and psychological factors that influence purchasing decisions. By adopting attitude-based segmentation, marketers can gain a deeper understanding of their target audiences and develop more effective marketing strategies, tailoring messages and offers to specific customer segments (Malinowska, Szymańska-Brałkowska, 2021).

Thus, it was necessary to segment the market based on attitudes in order to promote wellbeing in tourism trips. This segmentation of tourists with similar attitudes and preferences provides valuable information on how tourism offerings should be designed and promoted. This review highlights advances in understanding the behaviour of different buyer groups based on their desire to take care of their wellbeing during leisure and tourism trips. Each segment prefers wellbeing tourism offerings, which are defined as sustainable and supportive of harmony and balance of body, mind, and soul. Above average Sustainable Idealists are focused on living sustainably. They support the local culture, economy, and care for the environment. Curious Explorers are particularly interested in relaxing in nature and experiencing it on their own terms. Peace of Minds is committed to a healthy lifestyle, gaining inner peace and vitality.

The segments defined in this way show a picture of the different approaches to tourism of the inhabitants of the region that is called South Baltic[2]. Some country-specific characteristics have been added for each of Sweden, Denmark, Germany, Poland, and Lithuania. It is important to bear in mind that the motives of travellers are not fixed - they are a result of fashion, trends, the market situation, and may also vary depending on who the tourists are travelling with and what needs they are satisfying through a particular trip.

2.1. Peace of Minds - description of the target group

The interest in taking care of one's health during a holiday trip is growing for each year. What is more, a holistic approach to health is becoming more and more common among consumers and for some, holistic health is in fact the main focus of travel. In the SB WELL project, it was chosen to refer to those travelers looking to nurture their inner wellbeing, harmony, and balance while on holiday as Peace of Minds. These are individuals looking for a break from everyday life. They try to find ways to cope with stress, hectic lives, technological overload, and the high demands of their careers. An increasing number also leads a mindful lifestyle at home and expect similar conditions being met while traveling. For some, gaining inner peace is the main motivation for making the decision to travel. For them, rest is about spending time in silence, with a good night's sleep away from the daily clutter. It is also about indulging in physical and mental exercises and activities. These cravings determine their choice of location and type of holiday.

For leisure, this segment chooses secluded places without the hustle and bustle of tourists, places enriched with natural elements and direct giving access to nature. This group will prefer activities such as yoga on the beach, forest bathing, winter swimming, bird watching, apitherapy, and even sleeping outdoors. In terms of interpersonal relationships, getting to know others and connecting with like-minded people has a positive impact on the holiday experience. In addition, healthy, local, and organic cuisine and the simplicity of the interiors make the tourist offer even more appealing competitive (see table 1).

[2] The South Baltic region refers to the Baltic coast of Denmark, Sweden, Germany, Poland, and Lithuania.

Table 1.
Peace of Minds tourism offer proposal

Accommodation facilities	Accommodation inspiration	Catering facilities	Possible questions from hotel guests at the time of booking
Exercise mats provided in the hotel room (possibly an option to indicate when booking the room). Relaxing classes, e.g. yoga, stretching, healthy spine, meditation. Facilities, i.e. sauna, jacuzzi and the possibility to book these for personal use only. Information for guests on the natural composition of bed linen, towels, bathrobes. Possibility of booking a soundproof room. Calming music in the hotel and the possibility to switch on relaxing music in the room. Hotel room humidifiers (quiet, aesthetically pleasing).	Potted flowers in a room with a sign saying "Take care of me / Water me". Literary meetings, listening to music in nature. Colouring books/jigsaw puzzles in the room or at the reception and an offer of other creative fun activities, e.g. a game of chess. In flats with kitchen - herbs, fruits and vegetables growing in the garden or orchard next to the place of accommodation. Overnight stays in the open air, e.g. on hammocks in the orchard. Garden activities, including weeding, fruit picking.	A secluded dinner table or in a "quiet zone". Catering in recyclable packaging. Regional 'chocolates' and local suppliers. Zero food waste information. At least part of the food preparation process visible to the customer. Self-cooking workshops. Vegan and vegetarian products. Serving juices made from fruit and vegetables from the garden. Clear plates with a description of the dish (composition, origin).	Are there green spaces near the hotel? Where do you source the products used in your dishes? Where do the cosmetics in spas and bathrooms come from? Where can I find a secluded place outdoors where I can practice? Can I get a room away from the noise? Is there a menu available for people with allergies? For vegans/ vegetarians? Do employees earn decently/are they satisfied/are they treated with respect?

Source: authors compilation based on conducted surveys.

This segment comprises approximately 10% of the population (Melbye et al., 2022). This group is most often represented by young and well-educated women or middle-aged and older women, although men are also increasing in this group. Most often, these people live in cities and often travel alone. One third of those surveyed consider the experience of well-being of mind and soul as the most important element of travel. For another third, it is the attention to physical wellbeing. These two aspects are closely linked. The growth of this segment is proceeding in proportion with the expansion of traditional travel offerings to include calming classes, yoga, mindfulness retreats, digital detox, finding oneself, eating healthy food and drinks and relaxation courses.

2.2. Curious Explorers - description of the target group

In recent years, even more so after the Covid-19 pandemic, spending time in nature has become increasingly desirable and an important motive for travel. Tourists around the world are increasingly eschewing the 3S (sea, sun, sand) trips in favour of the 4E (education, excitement, entertainment, ethnicity), seeking active and exploratory experiences in cities of passive relaxation in the sun. Exploring nature becomes a break from stressful, noisy daily life for this group.

This segment regards relaxation in nature as crucial. They want to engage in outdoor activities at any time of the year, exploring nature trails on foot or by bike. Curious Explorers love to engage their senses to further experience a connection with the natural world around them. They seek out unique experiences. They value surprises and all things unexpected during their holidays. This includes discovering nature, as well as local culture, local products, local food, and the lifestyle of the locals.

Non-obvious excursions to little-known places, eating local specialities outdoors, attending events such as feasting in a clearing in the forest (so-called 'pop up events'), farm tastings enriched with stories about the quality, history and health properties of the food are experiences that add great value to such travellers.

Curious Explorers have a positive attitude towards social relationships, strive to be open-minded and treat everyone equally. With a high level of curiosity and a desire for a range of experiences, Curious Explorers usually balance city and countryside breaks. They often choose road trips, e.g. on wine routes, cider routes, chocolate routes, etc. They want to learn and understand the local culture and feel like a local. Travelling becomes part of personal development and education, excitement and entertainment. In their own words: 'We want to go off the beaten track and find hidden gems. To get to know the locals and feel like a local ourselves" (Melbye et al., 2022). Curiosity about the culture, nature, and lifestyle of the locals, exploring and learning broadens the tourists' perspective and gives them inspiration to share great memories of their trip when they return home. It is important for them to act responsibly, taking care of nature and helping each other. Taking responsibility for their own health, being out in nature and eating healthy is the essence of their true holiday (see table 2).

Table 2.
Curious Explorers tourism offer proposal

Accommodation facilities	Accommodation inspiration	Catering facilities	Possible questions from hotel guests at the time of booking
Designated routes for cross-country skiing, Nordic walking, and other outdoor sports. Snacks and drinks in rooms from local suppliers. Excursions organised by the hotel to unobvious, little-known places.	On offer is the option of a balloon flight/sleigh ride/cave tour, etc. Thematic hostels that reflect the culture, history or character of a particular region. This experience can be educational and inspiring for a group of tourists curious about the world.	A menu of local dishes. Possibility of meals in nature organised by the restaurant. Possibility to buy local specialities and baked goods of your own. Hotel vegetable, fruit and herb cultivation, honey apiaries.	Is there an opportunity for nature excursions with local people to learn about their favourite places, their stories, etc.? Does the food available in the restaurant (e.g. hotel) come from local suppliers/local harvests? Are there rooms/

Possibility to buy local handicrafts in the hotel shop. Offer attractive discounts or special prices for tourist groups. This can be composed as a package including accommodation and additional services. Luggage storage so that participants are free to explore local attractions. Information on tourist attractions in the area, available excursions and offer to organise tours. Loyalty programmes for groups, special benefits or discounts for returning customers.	Tree houses or eco-houses to immerse yourself in the natural surroundings while discovering local ecosystems. Rental flats in historic buildings. Farm quarters, for people interested in rural and agricultural life. It is a way to learn about local culture, culinary traditions and teach about agriculture. Accommodations that offer access to local guides. This will enable the group to gain a better understanding of the place, as well as take advantage of interesting excursions and attractions. Luxury wilderness tents in beautiful locations. This can be the perfect combination of comfort and adventure.	Workshops on plant cultivation, local food preparation, handicrafts. Culinary events, i.e. beer tasting, visiting wine valleys, and handcrafted beverages, supporting local producers.	apartments with forest/mountain/reservoir views on offer? Are there rooms/part of the hotel separate from children/families with children on offer? Are there (and if so is it possible to see) natural monuments i.e. caves, rivers, lakes etc.?

Source: authors compilation based on conducted surveys.

Curious Explorers prefer to travel in a group, in pairs, with friends or colleagues. 3 in 10 want to travel with their family (adults and children). 8 in 10 combine city and countryside visits during the same holiday. Their holiday trips are longer than average, with almost 4 in 10 spending at least 8 days traveling. Nature is a priority when choosing a destination, but culture is equally important during a holiday. For Polish explorers aged 50+, Nordic Walking and winter swimming are popular all year round. German Curious Explorers are attracted to what is small, local, and alternative. They relax outdoors even when the weather is not very encouraging. For Danes, nature is a decisive travel motivator both when choosing a holiday destination in Denmark and abroad. They want to get to know and understand the country and destination they are visiting. They value authentic and unique experiences of nature and culture, local food and meeting the locals. They believe that caring for nature, helping others, and living a healthy lifestyle is important for themselves and the planet.

2.3. Sustainable Idealists - description of the target group

Sustainable tourism (Kapoor, Jain, 2023) has become increasingly important in recent years. Therefore, environmental, social as well as economic issues related to sustainability in travel are becoming equally important. Sustainable Idealists account for 40% of all Germans and 33% of Scandinavians (Melbye et al., 2022) and, perhaps surprisingly, also Poles. Indeed, according to the Sustainable Travel Index (Januzi, 2023) compiled by Euromonitor, it is Sweden, followed by Finland and Austria, that leads the way among European (and global) countries in terms of sustainability. Poland ranks infamously last among European countries. Analysing Poland's Generation Y and Z however, (Dziadkiewicz, Lindell, Minga, 2023), it is apparent that young Polish consumers are becoming increasingly sensitive to climate issues, reducing food waste, optimising energy efficiency, and embracing the circular economy; moreover, consumers expect companies to act and provide affordable sustainability options. Leading the Zero Wasters, Climate Activists and Water Savers segments, young Poles are demonstrating their commitment to the environment through tangible actions. Recycling, choosing energy-efficient products and reducing their use of plastic, water and energy allows them to contribute to a healthier planet for their descendants, while also looking after their budgets. Despite Generation Z being very vocal about climate change, they are strongly constrained by the high prices of high-value products. This, however, causes positive (alternative to mass consumption) behaviour - buying second-hand, remanufacturing clothes and various equipment, using public transport, taking care of the circular economy, the trend of reducing everything, e.g. by borrowing and leasing.

The main motive of travel for Sustainable Idealists is generally to relax, recuperate and experience nature. However, to a much greater extent than tourists in general, this segment wants to take care of the planet and the environment. The way to do this is to enjoy the services of the ecosystem without over-consuming the planet's resources. They reduce their energy consumption. On holiday, they feel responsible for protecting the environment in the country they are visiting.

As interest in and scrutiny of sustainability grows, consumers are demanding that companies demonstrate how their products effectively contribute to the environment. Adding certifications for trustworthy and fair play companies is also an effective way to communicate sustainability and educate consumers. They consider the impact of tourism on the community they visit and believe it is important not to disrupt the daily lives of locals. They enjoy meeting hospitable people and want the money they spend to benefit the local community rather than a multinational company. This segment has a growing demand for green and sustainable solutions, and 6 out of 10 think it is important for a destination to focus on environmental protection.

Clean places that are less crowded with tourists are preferred. Here, hiking or long walks in nature is a sought-after activity and, in fact, an important motive for travel along with nature experiences in general. As many sustainability idealists consider choosing nearby destinations to reduce the negative environmental impact of transport due to CO_2-emissions, especially when flying, travel companies should address this target group in neighbouring countries and the domestic market.

Sustainable Idealists value the opportunity to experience authentic local life and culture. They want the money spent during a visit to benefit the community, so when buying locally produced goods or shopping in local shops they pay attention to the place of manufacture. Sustainable Idealists do not want to disrupt the daily lives of local people. They notice the impact of tourism on the community they are visiting and consider it important that their presence on holiday does not disrupt the daily lives of local people, or even if this impact is not positive, that it is neutral. These tourists enjoy learning about the customs of the local community and want the money spent during their holiday to bring economic benefits to the local community rather than to a multinational company.

As they strive to live ecologically and sustainably on a daily basis, using the right cosmetics, cleaning products, clothes and green transport, also when travelling and holidaying, environmental aspects will be a priority for them. They prefer clean and uncrowded places that protect the environment and offer ecological and sustainable solutions. They choose to hike or walk in nature, want to eat organic and locally grown products, stay in places with quality and sustainability certifications and feel that they are acting for the good of the planet. To support the environment, they are willing to pay more. They do not want to travel to places that are polluted and destroy nature or exploit people.

They prefer unpolluted places that are less crowded with tourists. For them, hiking or long walks in nature is the best form of activity and an important motive for travel, as well as their experience of nature. They place a high value on ecology and sustainability solutions in terms of both transport and accommodation and holiday stays (table 3).

Table 3.
Sustainable Idealists tourism offer proposal

Accommodation facilities	**Accommodation inspiration**	**Catering facilities**	**Possible questions from hotel guests at the time of booking**
Extensive information about green/ environmentally friendly transport to the hotel on the website, social media and during a phone call. Electric car charging station.	Use of eco-friendly materials in the hotel's furnishings, e.g. FSC-certified wood furniture, biodegradable cosmetics, and eco-friendly cleaning products. Water-efficient appliances, as well as water-saving information	Offering sustainable and healthy dishes prepared with local, seasonal, and organic ingredients. Vegetarian options, vegan options and dishes using fair trade products. Working with local suppliers and farmers, promoting the local	What are these clothes made of? Where do they come from? Where does the food served come from? Is it local? What is the composition? What is the shelf life of the products concerned?

Activities on offer for different age groups. Segregating waste Use of reusable materials. Possibility of purchasing, for example, coffee in your own takeaway cup. Environmentally friendly solutions for e.g. heating, lighting. Offer a variety of outdoor activities, e.g. running paths, bicycle rentals and access to recreational areas. Offer discounts or other benefits to guests who take environmental action, such as reusing towels or reducing energy consumption. Offer loyalty programmes that reward guest loyalty and contribute to social and environmental activities.	and incentives for visitors. Access to educational material on sustainability and ecology in the form of brochures, information in the rooms or on the hotel's website. Cooperation with local public transport providers or offer of an electric vehicle transport service. Working with local communities, supporting local projects and charities. Organisation of sustainable events. Minimising single-use products and offering environmentally friendly packaging. Introduction of elements of local culture and traditions in the design of the hotel and offer of information on local cultural activities. Certifications and labels demonstrating sustainable practices, such as LEED certification and the Green Key label.	economy, and reducing transport-related emissions. Incentives to reduce food waste by providing portion information, offering options to order smaller portions and supporting charitable activities, i.e. donating excess food. Recycling and composting practices in the kitchen, as well as access to information about these activities. Minimise single-use packaging and disposable utensils. Allow guests to take leftover food in their own containers. Minimise water consumption in the kitchen through the use of efficient cleaning systems, as well as access to water-saving information. Culinary workshops and educational events on sustainable eating. Green Packaging and Dishes, also take-away packaging. Labelling on menus dishes and drinks that are environmentally sustainable so that guests can make more informed choices. Community initiatives, i.e. free meal programmes for people in need, support for local charities or promotion of food education in the community.	Is a vegan/vegetarian menu served? What goes into the cosmetics? What activities are planned for children? Does the hotel use renewable energy sources? Are there chargers available for electric cars? Are eco-friendly cleaning products used? Does the hotel use waste minimisation methods? Does the hotel work with local suppliers? Are local products available on the breakfast menu? Does the hotel have certifications for sustainable practices, such as LEED certification? Does the hotel offer public transport or bicycle rental options? Does the hotel participate in local environmental programmes? Are there educational events on sustainability? Does the restaurant work with local farmers? Does the restaurant use biodegradable or recyclable packaging?

			Is it possible to take leftover food in your own containers? Is information available on sustainable restaurant practices?

Source: authors compilation based on conducted surveys.

In the case of Sustainable Idealists, it is a group with slightly more women than men. It is represented by a range of age groups with a slight predominance of younger generations. All levels of education are represented.

3. Findings – Towards wellbeing tourism in Poland

After characterising Polish tourists in terms of their belonging to a specific segment of wellbeing tourism (Peace of Minds, Curious Explorers, Sustainable Idealists), individual in-depth interviews were additionally conducted with some of them. The interviews were aimed at clarifying previous answers and better identifying purchase motives. After receiving the responses, the authors noticed some regularities that overlapped to a great extent with previous studies of the German and Scandinavian markets, regardless of the age of the respondents and their family status.

For the majority of the participants in the survey (40%), travelling is about relaxation and getting fit. However, equally important are the goals of active sightseeing (almost 30%) and gaining new experiences of almost 30%. In this respect, Peace of Minds accounted for the largest percentage of respondents, however, the characteristics of Curious Explorers and Sustainable Idealists were shown by a large proportion of respondents.

In terms of preferences for choosing a holiday destination, the majority of respondents (70%) prefer destinations where they will be able to experience the local culture and have new experiences, getting to know the people of the region and their customs. This indicates a strong interest in the cultural and interpersonal aspect of travel, as well as a desire for memorable experiences, which points to the characteristics described above for the Curious Explorers target group.

When analysing preferences for accommodation, respondents showed little variation, but the most preferred option was agritourism (34%) preferred by Curious Explorers and accommodation in a hotel that cares about environmental and sustainability issues (33%), equally chosen by Sustainable Idealists. A wooden, eco-friendly lodge in nature with an offer of forest baths, organic meals and classes in relaxation, yoga or meditation would be chosen by over 30% of respondents closest to the Peace of Minds group.

Many respondents (25%) also indicated that leisure with a focus on digital detox, finding oneself or attending relaxation courses was important to them. In doing so, they demonstrated characteristics that illustrate the Peace of Minds group.

Only 3% of the respondents explicitly chose the criterion of proximity to home, wanting to minimise the negative environmental impact of transport due to CO2-emissions during their trip or forgoing air holidays altogether. However, minimising the environmental impact of transport is not the main factor in choosing a holiday destination for the majority of respondents, indicating that only a minor part of the respondents show characteristics of the Sustainable Idealists group.

Regarding the criterion of the purpose of holidays, it can be noted that more than 45% of respondents see holidays as a time to slow down, regenerate body and spirit, indicating the predominant importance of the relaxation and regeneration aspect during holidays. Over 40% of respondents see holidays as an opportunity to discover nature, local culture and products. To a similar extent, respondents showed characteristics of both Peace of Minds and Curious Explorers. 13% of respondents indicated that they were most likely to choose hiking, eating organic produce and relaxing while respecting the protection of the local environment, which may suggest a growing interest in sustainability-oriented tourism. Sustainable Idealists are therefore a distinct minority of respondents on this question.

In terms of concern for sustainability and environmental protection, the survey results show that almost half of respondents (49%) do not currently pay attention to sustainability when planning their travel. However, 22% consider it very important or even crucial. Nevertheless, a significant number of respondents (28%) are not closing their eyes to this issue in the near future. The results show that, in all likelihood, in the future the surveyed group may start to exhibit more characteristics of the Sustainable Idealist target group.

In terms of frequency of travel and companionship when travelling, respondents representing the Curious Explorers group were the most likely to travel alone (24%). Travelling alone is still less popular, as indicated by only 9% of respondents showing characteristics of the Peace of Minds group.

When analysing leisure activity preferences, the majority of respondents (66%) prefer sightseeing and exploring the local community, places and culinary flavours. Relaxation activities related to nature, such as hiking, are also favoured (27%), while practices related to spirituality are the least preferred (5%) - this is a difference with the Nordic countries, where there is a spiritual element to the connection with nature. In this respect, respondents manifest most of the characteristics attributed to Curious Explorers and, to a slightly lesser extent, Sustainable Idealists.

In contrast, the majority of respondents (70%) felt that taking care of their health was important during their holiday, but not the most important. At the same time, almost 20% indicated that taking care of their health is of paramount importance to them during their holiday. For only 10% of respondents this issue is not important at all. Along with health, healthy eating while travelling is considered important. 65% of the respondents try to eat healthily when travelling, but do not pay much attention to the origin of the products they consume. However, 13% of the respondents did indicate that they choose organic and local products paying attention to their composition and origin. These people therefore show characteristics of groups such as Sustainable Idealists or Curious Explorers.

Conclusion

Changes in tourist behaviour related to pandemics and other crises in Europe have given rise to research in tourism, as well as the search for new differentiators in the tourism offer. In addition, there is already a shift away from overly touristic destinations to less busy ones with an emphasis on rural and nature tourism. This could be an opportunity to help more remote destinations flourish, while reducing the impact of over-tourism in others, as was seen before the pandemic. Changes in tourist preferences could also be an opportunity to achieve the Sustainable Development Goals, including the health and wellbeing target. Research has shown that tourists' wellbeing is influenced by relationships, learning about new places and cultures, and education more broadly. Therefore, initiatives that engage tourists in communities that have similar behaviour, share similar values and live consciously will not only promote the need for wellbeing in tourists, but also foster benefits for the local community, economy and environment.

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SILESIAN UNIVERSITY OF TECHNOLOGYPUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIESNO. 192

LEADERSHIP IN CRISIS CONDITIONS ON THE EXAMPLE OF PUBLIC ORGANIZATIONS

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Purpose: The purpose of this article is to analyze and present the conclusions of the research conducted on leadership and the qualities of a leader that were expected by public sector employees to those who lead their organizations under crisis conditions.
Design/methodology/approach: For the purpose of the article, the authors attempted to synthesize views on leadership and the characteristics of a leader. Conducted in 2022 among employees of the public sector, the empirical research using the method of structured interviews was used to analyze attitudes in a crisis situation among managers of public institutions located in Lubuskie and West Pomerania.
Findings: The results of the research made it possible to determine the leadership qualities expected by employees of public entities toward management during the COVID-19 pandemic.
Research limitations/implications: The analysis presented is not comprehensive, due to the multifaceted nature of the leadership issue. The presented conclusions may provide important information for further research into the issue at hand.
Practical implications: The analysis of the research results made it possible to indicate which leadership competencies should be improved by managers employed in the studied public entities. The presented research results can become a guideline for managers employed in other public organizations, as well as private entities.
Originality/value: The value of the research conducted lies in identifying key leadership qualities that, in the opinion of subordinates, were felt to be in short supply, particularly noticeable during the COVID-19 pandemic.
Keywords: leadership, leadership theories, leadership qualities.
Category of the paper: research paper.

1. Introduction

Dynamic changes in the environment, increasingly causing crisis phenomena, lead to a modification of the perception of the role of the leader in modern organizations. It turns out that the conduct of the leader often becomes a condition for the survival of the organization and determines its chances of future development (Adair, 2000). Awareness of the inevitability and diversity of crises occurring in the modern environment makes the selection of the right leader with certain characteristics significantly affect the future fate of many organizations. Crisis situations are encountered when, as a result of external or internal circumstances, there is an imbalance of functioning, or even a loss of control over the development of the situation and the emergence of an unacceptable level of threat to the interests and objectives of the entity under consideration, which triggers the need to take extraordinary measures to return to a state of equilibrium (Sobolewski, 2012). A crisis is "the culminating phase of an escalating crisis situation, arising as a result of unexpected circumstances, ineffective countermeasures, resulting in a loss of control over the situation and a lack of concepts for its control" (Zdrodowski, 2014).

The success of anti-crisis activities depends largely on the ability to process knowledge about specific conditions, circumstances, and modes of action, as well as the ability to "anticipate, infer, and design changes according to indications of knowledge about relationships between events and between sets of events of particular categories of knowledge both possessed and yet to be acquired" (Zdrodowski, 2014). In practice, crisis management takes place under intense time pressure, which usually results in paying attention to the present and immediate future instead of long-term problems. In addition, the need for rapid decision-making goes hand in hand with a deterioration in the ability of managers to correctly assess the consequences of a given decision, making it difficult to conduct the recovery process (Slatter, Lovett, 2001). In this context, the leadership qualities that an organization's leaders should possess and their ability to cope with crisis conditions become particularly important.

2. Leadership and characteristics of a leader - theoretical context

Precisely defining leadership is not an easy or straightforward task, as the meaning of the term for many researchers turns out to be varied. Leadership is sometimes equated with a combination of specific character traits and talents that allow a leader to persuade other people to carry out specific actions. The strength of the interpersonal relationship occurring between the leader and the others is an instrument for achieving goals, not through coercion or pressure, but through persuasion and arousing motivation (Bass, 1990; Griffin, 2002). In the opinion of many researchers, leaders should be a reflection of the qualities expected by colleagues or the organization, which makes leadership not a unilateral influence but a confrontation characterized by full interactivity. Leadership takes place in a group environment, in which potential followers are subjected to the influence of the leader, with the size of the group being of secondary importance, since leadership processes can occur in a small team as well as the entire organization. However, the task of the leader remains to initiate and sustain relationships, create channels of communication and maintain bonds, leading to cohesive, effective and goal-oriented teams (Hogan et al., 1994; Hughes et al., 2006). In this context, leadership can be understood as the ability to use the potential inherent in co-workers, developing their knowledge and talents to achieve the organization's goals (Lambert, 1999). Thus, a leader must be aware of the need to create conditions that stimulate the development of employees' creativity and their skills (Skrzypek, 2000).

Research on leadership conducted by W. G. Bennis and B. Nanus made it possible to identify the most characteristic traits of a leader, which turned out to be the ability to create a vision combined with the ability to communicate this vision in a way that is understandable to others, as well as consistency and honesty towards tasks and people, and awareness of one's own strengths and weaknesses (Bennis, Bennis, 1985). In turn, on the basis of observations conducted by J. Adair, it was established that a leader is characterized by: enthusiasm, integrity, firmness, fairness, cordiality, humility, self-confidence (Adair, 2003). According to research conducted by J. Collins, the most effective leaders are characterized by a specific personality, combining modesty and willpower, meekness and consistency, timidity and steadfastness. In his assessment, five degrees of leadership can be identified. The lowest degree is a very capable employee who, using his knowledge, skills and talent, contributes to the company's performance. Grade two is a valuable team member, able to work effectively with others and contribute to the team's tasks. Grade three means a competent manager who can organize people and resources to carry out tasks effectively. Degree four means an effective leader, i.e. one who stimulates and reinforces commitment to a specific vision and the pursuit of its realization, and stimulates the team to work at a high level. Grade five the highest denotes a leader capable of achieving long-term success through a unique combination of personal humility and modesty with professional decisiveness and courage (Collins, 2001).

An original concept of leadership, relating to the issue of succession and the related promotion of a person to a leadership position, was developed by M.D. Watkins, pointing out the seven changes required when taking a leadership position. According to M.D. Watkins, the process of change leading to leadership is as follows (Watkins, 2012): Specialist > A detail-oriented person of the various departments of the organization > Integration of collective knowledge and ability to work out compromises > Deductive reasoning > Increased effectiveness through analysis of the organization's systems > Perception of issues important to the organization > Diplomat shaping personality > Personal role model. However, there is no iron rule by which leadership can be formed. As W. Aftyka notes, leadership can be achieved through various ways, and its measure can sometimes be the success achieved by a person (Aftyka, 2014). At least four such paths can be distinguished in the public sphere. "The first is the sphere of political institutions, the motherland of political leadership. From the point of view of the processes of governance in a democratic state, the most important thing here is to be equipped with a democratic mandate. The second (...) is organizational leadership in the broader public administration. In this case, the formal basis for the performance of leadership functions is more diverse - in addition to the democratic mandate, it can be specialized qualifications, bureaucratic promotion or political patronage. The third (...) is the leadership of non-governmental organizations working to advance the public interest. As the last (...) indicate international and supranational organizations of various types" (Szczupaczinski, 2014). Leadership in public administration is worth considering on four levels, analyzing: (1) organizational processes of transforming resources into results characteristic of administration (public goods), (2) adaptive changes that adjust administration to changing conditions, (3) creation of its cultural identity, (4) definition of goals and conditions for their implementation (Szczupaczyński, 2014) - see Table 1.

Table 1.
Planes of analysis for leadership in public administration

The planes of leadership analysis	Internal aspects	External aspects
I. Processes of transforming resources into results specific to public administration	• Motivating employees • Setting performance standards • Creating an organizational bond	• Leadership as part of building the desired image of the office as an employer • Activities to maximize the budget
II. Adaptive changes that adapt administration to operating conditions	• Designing and communicating change, overcoming resistance to change • Inspiring and structuring organizational learning processes • Restructuring organizational resources	• Seeking external support for change and obtaining necessary resources • Representing organizational interests to policy makers
III. Creation of cultural identity of public administration	• Interpretation of mission-related values and standards • Strengthening the ethos of a public administration official • Building organizational symbolism	• External activities aimed at strengthening the social legitimacy of the administration • Cooperation with institutions and bodies that influence the public perception of public administration and its cultural identity (media, educational institutions that educate administration personnel, etc.).
IV. Setting goals and shaping the conditions for their implementation	• Interpretation of the goals set for public administration by the environment	• Formal and informal interactions with the public in the process of shaping public policies and objectives pursued by the administration • Influencing public opinion to gain support for specific policies and projects • Building strategic alliances and cooperative relationships (with NGOs, business, political parties, etc.)

Source: Szczupaczyński, 2014.

The presented planes and aspects, as well as attributes and characteristics of leadership served as the basis for formulating and concretizing the scope of the study of the issue of leadership in public entities under the conditions of the crisis caused by the Covid-19 pandemic.

3. Research methodology and results

Leadership capabilities are undoubtedly one of the key factors in coping with threats to the organization, so the authors' research aimed to answer the question: in connection with the emergency situation caused by the Covid-19 pandemic, did leadership qualities expected by subordinates become apparent in the management of public entities?

The first stage of the research was a theoretical analysis of the concepts under study and a review of the literature on the role and importance of leadership, with a particular focus on public organisations. The analysis was carried out using the available publications and involved operationalising the relevant concepts related to leadership. The research used the method of purposive selection. It is the most typical case of non-random selection and involves the completely subjective selection of the surveyed units for the sample, in order to obtain the broadest and most complete information. The assumptions of the survey assumed that it would include officials of local government units of different sizes (both municipal and city offices) and offices subordinate to the government administration. The study conducted by the authors took place in the autumn of 2022 and included 36 respondents, employed in clerical positions, representing 14 public entities (11 local government units and 3 public institutions subordinate to government administration) located in Lubuskie and Zachodniopomorskie Voivodeships. The research method used was a structured interview conducted by telephone with a respondent who had a minimum of 3 years of seniority in the institution. The requirement for a minimum length of service was based on the respondent's need to compare the leadership qualities noted in superiors before and after the pandemic. As a result of the survey, it was possible to:

- determine what qualities respondents believe a true leader should possess;
- to learn the opinion of respondents about the intensity of a given trait in the head of the unit and the direct superior of the person under study both before the pandemic and currently;
- to learn the opinion of respondents about the skills of the unit manager and direct supervisor of the surveyed persons related to selected aspects of leadership in public administration, presented in Table 1.

Based on the results of the survey, a list was created of the qualities most often indicated by respondents that a leader should have. In addition, it was possible to determine to what extent, according to the respondents, each trait is possessed by their direct superiors and managers of individual offices (Table 2). When comparing the qualities that the respondents expect from a leader and those that they see in reality in their direct superiors and the head of the office, one can see considerable discrepancies. The biggest differences were noted for qualities such as charisma and the ability to admit mistakes. Among other qualities lacking in direct superiors and office managers, respondents indicated: the ability to make the right decisions, being an example, self-confidence, and objectivity/fairness. The survey also revealed the existence of differences in the possession of leadership qualities between the head of the unit and the direct supervisor of the people surveyed. The largest disparities occurred in such qualities as listening skills, communication skills, and competence.

Table 2.
Leadership qualities and their occurrence as assessed by the surveyed individuals

Trait desirable in a leader to a very high or high degree	Percentage indications by respondents	Trait present in immediate supervisor [%]	Trait present in the office manager [%]
Self-confidence	88,9	52,8	58,3
Being an example	86,1	44,4	36,1
Ability to make the right decisions	86,1	33,3	38,9
Competence	83,3	77,8	61,1
Charisma	83,3	2,8	5,6
Communicativeness	77,8	47,2	63,9
Ability to listen	75,0	63,9	38,9
Ability to admit when you are wrong	75,0	22,2	16,7
Objectivity	72,2	44,4	41,7
Consistency	66,7	52,8	61,1
Ability to persuade	58,3	50,0	44,4
Firmness	58,3	75,0	80,6
Patience	55,6	44,4	38,9
Courage	52,8	41,7	44,4
Intelligence	52,8	52,8	47,2
Creativity	50,0	33,3	52,8

Source: own study based on research results.

Based on the research, an attempt was also made to verify the hypothesis that crisis management, such as the Covid-19 pandemic, would affect the visibility of desirable qualities in a leader among office managers. However, the data in Table 3 shows that such a situation did not occur. To a small extent, positive changes were noted for such qualities as communicativeness and consistency. For the rest, there were no significant changes, which means that functioning in the era of pandemonium, did not result in significant differences in the occurrence of the qualities of a good leader among office managers and direct supervisors of the people surveyed. Table 3 indicates a certain persistence in the level of occurrence of certain traits perceived in managers, despite the functioning of offices and the way their work is organized for a long time under conditions far from standard.

Table 3.
Leadership traits and their occurrence before and after the Covid-19 pandemic as assessed by the people surveyed

Trait desirable in a leader to a very high or high degree	The presence of the trait in the immediate supervisor		Occurrence of the trait in the head of the office	
	before the Covid-19 pandemic [%]	currently [%]	before the Covid-19 pandemic [%]	currently [%]
Self-confidence	55,6	52,8	52,8	58,3
Being an example	47,2	44,4	33,3	36,1
Ability to make the right decisions	30,6	33,3	44,4	38,9
Competence	77,8	77,8	63,9	61,1

Cont. table 3.

Charisma	2,8	2,8	5,6	5,8
Communicativeness	36,1	47,2	52,8	63,9
Ability to listen	61,1	63,9	41,7	38,9
Ability to admit when you are wrong	25,0	22,2	13,9	16,7
Objectivity	47,2	44,4	36,1	41,7
Consistency	44,4	55,6	55,6	63,9
Ability to persuade	47,2	50,0	47,2	44,4
Firmness	72,2	75,0	80,6	80,6
Patience	38,9	44,4	41,7	38,9
Courage	41,7	41,7	47,2	44,4
Intelligence	52,8	52,8	50,0	47,2
Creativity	41,7	33,3	47,2	41,7

Source: own study based on research results.

The planes of analysis of leadership in public administration presented in Table 1 were used to formulate queries to respondents about differences in attitudes in the head of the unit and the direct supervisor of the person under study. An aggregate summary of the responses obtained relating to both internal and external aspects of leadership in public administration is presented in Table 4. The data in Table 4 shows that the changes in the attitudes of superiors observed by the respondents are small. According to the respondents, they perceive the greatest differences with regard to the increase in leadership skills in a crisis situation. The observed change can be explained by the fact that the pandemic period was fraught with many emergency situations, which may have contributed to an increase in the competence of office managers to deal with crisis situations. A positive change, albeit very small, was also perceived by respondents in the category of interpreter of goals and tasks carried out for the benefit of the environment, which can be explained in the same way as in the case of crisis management. No clear changes were observed with regard to the other aspects studied.

Table 4.
Differences in attitudes before and after the Covid-19 pandemic as assessed by the people surveyed

Specification	Occurrence of a given attitude before the pandemic (on a scale of 1-10)		Occurrence of a given attitude after a pandemic (on a scale of 1-10)		Change	
	Immediate supervisor	Office manager	Immediate supervisor	Office manager	Immediate supervisor	Office manager
Inspirer for action	6,3	5,2	6,0	5,4	-0,3	0,2
Creator of the image of the office as an employer	6,1	4,9	6,2	4,8	0,1	-0,1
Leadership skills in a crisis situation	4,7	5,0	5,2	5,4	0,5	0,4
Representative of organizational interests	6,8	4,6	7,1	4,5	0,3	-0,1
Creator of the ethos of a public administration official	3,8	4,0	3,6	4,1	-0,2	0,1
Creator of the image of the office in the immediate environment	5,1	5,7	5,0	5,9	-0,1	0,2

Cont. table 4.

Interpreter of goals and objectives implemented for the benefit of the environment	5,2	5,8	5,6	6,1	0,4	0,3
Implementer of tasks and objectives performed by the office	6,6	7,1	6,4	7,4	-0,2	0,3

Source: own study based on research results.

4. Conclusions and implications

The research conducted has established that:

1. Surveyed officials most often point to: self-confidence, being an example, the ability to make the right decisions, competence, charisma as qualities that a true leader should have. Charisma and the ability to admit mistakes are, in the opinion of respondents, the most deficient qualities of a direct supervisor and office manager. Large deficiencies were also observed in the case of: ability to make the right decisions, to be an example, self-confidence, and objectivity.
2. The period of the Covid-19 pandemic did not significantly change the intensity of the leadership qualities observed in office managers and direct supervisors of the surveyed individuals. There was a slight positive change in such traits as communicativeness and consistency. There was a slight regression in the case of creativity. The observed changes can be explained by the need to comply with pandemic procedures set by superior authorities.
3. The changes related to various aspects of leadership in public administration, as expressed in the attitudes of superiors, which were observed by the respondents are small and concern only two areas: the ability to lead in a crisis situation and the interpretation of goals and tasks carried out for the benefit of the environment.

In conclusion, it should be noted that the period of the Covid-19 pandemic had little effect on the prominence of leadership qualities and attitudes among office managers and direct supervisors of the people surveyed. Although the recorded changes were a consequence of functioning under crisis conditions caused by the pandemic, their scope and magnitude should be considered symbolic. The perceived deficit of many key leadership qualities, has not been filled at all or to a very small extent. The reasons for this can be traced to the specific factor responsible for the crisis, which was the pandemic, and the model for countering its effects developed and implemented from the top down, which naturally necessitated the application of accepted procedures and the adoption of certain attitudes, especially in public sector entities. However, the adopted model for combating the pandemic and the accompanying procedures do not explain such deficits in the expected qualities of a good leader, such as the ability to admit error, objectivity, and being an example. These are attributes that undoubtedly need to be improved by many office managers and direct supervisors of the people surveyed.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANISATION AND MANAGEMENT SERIES NO. 192

MANAGEMENT OF MARKET TRADE IN BORDER TOWNS ON THE EXAMPLE OF CIESZYN

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Purpose: The purpose of this article is to assess the level of development of market trade in border towns on the example of Cieszyn. Markets have been the place of retail sales of everyday goods for many years. However, their importance as a place of sale has been steadily declining for years. This is due to the increasing role of large-format shops, such as hypermarkets, supermarkets, discount shops, shopping centres and online shops. Furthermore, in border regions, the condition of market trade is determined by the purchasing preferences of customers from neighbouring countries, such as the Czech Republic or Slovakia in the example under analysis.
Design/methodology/approach: The research included studies of specialised literature on trade and marketing. The article quotes official data from the Central Statistical Office [GUS], the CSO Local Data Bank as well as the results of survey research published in the specialist literature. In addition, data from the Municipal Markets Department, which is an organisational unit of the City Hall in Cieszyn, was used. The timeframe of the analyses conducted covers the years 2018-2023.
Findings: The article includes a characterisation of the origins of market trading, a description of selected historical European markets, such as the Greek Agora, the Roman Forum, medieval and renaissance markets, and the contemporary Santa Caterina market in Barcelona. The authors further described the classification and characteristics of marketplaces. The next section explores the functioning of markets in Cieszyn, including the decline in the number of markets, their sales area and the number of sales outlets over the analysed period. The considerations were supported by a compilation of current statistical data.
Research limitations/implications: It would certainly be worthwhile to repeat representative research in the future, among both actual and potential customers of Cieszyn's markets, but also among the stall renters, i.e. sellers of goods, as well as among representatives of other interest groups such as customers from the Czech Republic and Slovakia.
Practical implications: Effective management of the development of local market trade in border towns such as Cieszyn benefits customers and sellers of goods as well as the local government. The article also points out the determinants of choosing a particular market, bazaar or inner-city marketplace as a shopping destination.
Originality/value: The results of the analyses are of both cognitive and pragmatic value, especially in the context of developing and implementing plans for the development of the market trading format in Cieszyn.

Keywords: Marketplace trade, retail trade marketing.
Category of the paper: Research paper.

1. Introduction

Market trading is one of the oldest forms of retail trade. Its origins are linked to the institution of markets, i.e. fairs (Szromnik, 2014). This form of sales has a centuries-old tradition and continues to function in modern times. Market trading maintains a primarily local character and is complementary to other forms of retailing (Wojdacki, 2011). Currently, the terms "market", "bazaar", "fair" and "marketplace" are used interchangeably. Markets are designated areas and structures (squares, streets, market halls) with permanent or seasonal small-retail outlets or facilities for trade on particular days of the week or on a daily basis. Non-store retailing is carried out with the use of kiosks, storerooms, market stalls, store places, sheds, silos, elevators and other facilities equipped with appropriate equipment and technical devices for the storage and trade in goods (Ciechomski, 2014).

Market trading, while retaining its local character, is complementary to other forms of retailing, including those based on stationary retail outlets (Szumilak, 2008). At the same time, it is the form of retail trade whose organisation and functioning is most affected by local government authorities. Market trade is also an important direct sales channel for agricultural products and an important element of local food systems. More on this subject is written by (Karwat-Woźniak, 2013) and (Bareja-Wawryszuk, Gołębiewski, 2013). In addition to agricultural products, handicraft products are traded. The significant role of market trade in the recent past is evidenced by the fact that its share in the FMCG retail market was estimated at 5-10% (Kosicka-Gębska, Tul-Krzyszczuk, Gębski, 2011).

Prices at marketplaces are set by negotiation. Municipalities regulate legal and tax issues. Similarly to other shopping places, a market has its advantages and disadvantages. For the buyer, buying at a market means a lot of space for negotiating the price with the seller. There are no queues at markets and the range of products is relatively wide. The food products, unprocessed, are very often of good quality. Personal service and contact with the seller can foster long-term relationships and build customer trust (Malinowska, 2016). On the other hand, at most markets it is possible to pay almost exclusively in cash, which makes the shopping experience less convenient for some customers. Not many sellers, generally those located in buildings or halls, provide the possibility to pay by card.

2. Historical European markets

The market is a public space. It is a place where democracy once was formed, where architecture is created and where people meet. Democracy was shaped by people who did not know each other and, instead of wielding the sword, had to learn to cope in another way - by communicating with each other. Markets and marketplaces are often the oldest elements of a city's urban planning that have survived to the present day. Markets were the cornerstone of cities - they were the motivation for its creation, as organised exchange was one of the first reasons why people started to stop at certain places (Kvapilová, 2015). Many of these places have survived to this day (either renovated or in the form of ruins) and are not only a centre of interest for tourists, but they are also witnesses to the history and development of the agglomeration. The following characterisation of some historical markets is based on the work “Olomoucká tržnice” (Minarovič, 2019) and other studies (Sitte, 1995). Historically, the most interesting markets include:

The Greek Agora

The facility is a phenomenon, a memorial to the greatest bustle of ancient Greek cities, a centre of economic prosperity and public life. It was here that the philosophies and ideas shaping humanity to this day were born. It is where democracy evolved. Originally, the agora was just a spare place, a square where fairs were held. This economic activity was a "magnet" for arriving citizens. Agora in Greek means market place, trade. In an archaic sense, it was called a public space - a square where citizens gathered to carry out trade transactions, but also to announce court verdicts, etc., which basically means that the agora was the centre of the public life of the city. Agora was the place where the market surveillance authority and other bodies functioned. In Athens, officials called agorans worked in the agora, making sure that the goods in the market were clean and undamaged. They also collected fees from foreign traders for permits to sell goods. They also made sure that established weights and measures were respected and imposed penalties on dishonest sellers.

Figure 1. Stoa of Attalos on the Athenian Agora.

Source: https://www.expedia.com/Stoa-Of-Attalos-Athens.d6062029.Vacation-Attraction.

On the perimeter of the agora, in addition to the temples and administrative buildings, there was a stoa, i.e. covered passageway or portico, which surrounds the agora. The stoa is a public space. In case of bad weather, merchants sold their goods here, artists exhibited their works or religious gatherings were held in it. It is a two-storey building, a kind of colonnade framed by columns on three sides. On the fourth side there were rooms directed inwards, used as merchants' storerooms.

Figure 2. Stoa of Attalos - columns on the ground floor.

Source: https://www.expedia.com.tw/en/Stoa-Of-Attalos-Athens.Vacation-Attraction.

The Roman Forum

The Roman Forum was, formally and in terms of importance, a continuation of the Greek Agora in ancient Rome. It was a marketplace located in the busiest part of the city. Fairs were held there and the city administration functioned, but it had less ideological and spiritual significance than the ancient Greek Agora.

Figure 3. The ruins of Trajan's Market at the Forum of Trajan in Rome.

Source: http://www.jeffbondono.com/TouristInRome/TrajansMarket.html.

The Roman way of life and the gradual loss of spiritual values in favour of consumerism and hedonism meant that the Roman Forum served mainly commercial purposes. In addition to these, the Roman Forum also had the important function of communicating between the emperors of Rome and the public - a function that stemmed from the need to ensure social interaction. The Forum was also a phenomenon in terms of social communication. It was through his erudite speeches in that place that the emperor secured his extraordinary popularity and the favour of the citizens.

The Romans built a huge covered market hall. Trajan's Market is the first such large building. It was a large complex of 150 shops, offices and various workshops. The market was a huge, semicircular structure, with six floors. On the ground floor there was a large hall used for various cultural purposes, especially the organisation of concerts. The upper floor had the offices of the market administrators. Next to the offices there was a storeroom where goods were kept. It was the busiest, however, on the lower levels. That was the place where everyday items, such as wine, olives, oil or fish could be bought. In a sense, the market was what shopping malls are today (Trajanův trh, 2018, online). Many shops were small, so it was not worthwhile for customers to enter them, so the shopkeeper usually stood in the entrance and it was sufficient for the customer to simply say what they needed. The seller would bring the goods and the exchange would take place in front of the entrance. As with the Greek agora, Trajan's Market offered a wide range of goods and services, from providing labour by slaves, buying food from local farmers to selling expensive textiles from all over the known world at the time.

Medieval and renaissance markets

After the period of antiquity, the significance of markets declined. Magnificent markets such as the Trajan's Market are either rebuilt or deserted. Furthermore, in the Romanesque period the defence of many towns was carried out without stone fortifications. Thus, every bourgeois house was also a defence element and its ground floor had to be properly massive with a minimum number of openings for doors and windows. Consequently, there were no opportunities to open a shop on the ground floor. Thus, light sheds and stalls were created where sales took place (Sitte, 1995). It was only with the advent of the Gothic and Gothic fortifications that the situation for trade improved dramatically. Town halls were built in the town squares, providing space for merchants on the ground floor. The inspection of food and the collection of sales fees could therefore take place directly in the town hall. Guilds began to develop in the cities, which gave rise to covered markets. A well-known example is the "Vleeshuis", e.i. a slaughterhouse building in Antwerp. It is an longitudinal single-storey and single-aisle hall where cattle were slaughtered and meat sold. The Renaissance gave even more openness to architecture, which also brought major changes in the building of markets. They were located outdoors in the squares. In addition, their surfaces were paved and decorative fountains were built. Arcaded structures covering markets, such as the Loggia del Mercato Nuovo in Florence, appeared.

Modern marketplaces

The market should be defined by space, and not close the space off. It is a public place and should be accessible to all. The Ghent’s market, for example, is a typical open hall, which was chosen precisely to preserve the public space. An interesting blending of functions emerges here, where the market blends in with the square and the hall building complements it. Only seasonal or annual fairs are held in the square, and the basement of the market is home to a bicycle parking area and a community centre.

Meanwhile, in the Netherlands, regulations require traditional fish and meat markets to be held in covered areas for hygiene reasons.

The Santa Caterina Market in Barcelona is a characteristic building located in the centre of Barcelona's old district. The original site was an old market hall from the 19th century, which was no longer sufficient for the requirements of the time, and the decision was made to rebuild it. All that remains of the old building is the floor plan and facades, which are covered by a distinctive wave-shaped roof.

Figure 4. The Santa Caterina Market in Barcelona.

Source: http://www.mirallestagliabue.com/project/santa-caterina-market-renovation.

From a typological point of view, it is a closed market. It retains the horizontality that was also typical of the original market square. It forms a single block, as large as the surrounding buildings, so it fits in with the surrounding urban structure, making it blend in well with the neighbourhood, and adding energy to the place in which it is located. The market is open all year round, and the wine and food market is its quintessential feature.

The above examples of selected ancient, medieval, renaissance and modern marketplaces prove that it is a form of trade characterised by timelessness and high resilience to the turbulent conditions of the socio-economic environment in which this form of sales operates. Market trading is not a homogenous category, as it comprises a variety of marketplace types.

3. Types of markets

Market trading is as old as humanity. Only at a certain stage in its evolution did it begin to centralise and institutionalise. Whilst markets sell basically everything a customer wants to buy, one might also distinguish narrowly profiled, specialised types of markets. A classification of markets may include the following:

1) **Specialised markets** – such as vegetable, fruit, fish, meat markets. Often city streets or markets received their names precisely from the fairs that were held there in the past (Minarovič, 2019). Nowadays, marketplaces profiled very narrowly - on one range of goods - are rare, and multi-range markets rather dominate. These markets have been replaced by stationary and online shops, and especially by modern large-area retail formats, such as hypermarkets, supermarkets, discount shops and shopping centres, which provide buyers with a variety of products and the associated benefits of free choice of preferred goods;
2) **Weekly markets** – held regularly once a week. They usually offer basic food products sold to local residents;
3) **Farmers' markets** – in essence, this is similar to a weekly market, the difference being that sales are not just made within the local community, as food producers from a wider area sell their produce at these markets. This is generally organic food, e.g. labelled as bio, eco. This type of markets is usually co-organised by the municipality, for which it is also a cultural and social event, as, in addition to sales, it can feature, for example, handicrafts and other products of local artistic handicraft. An example of this type of market is the wine market in Mediterranean countries. These are essentially more luxurious markets where visitors come to taste and purchase the liquors on site, as well as cheeses and other accompanying accessories for wine consumption. The format of this type of market is becoming very popular and is spreading beyond the Mediterranean;
4) **Bazaars and "flea markets"** – in its original meaning, this is a Persian term for a market or fair. In its figurative sense, it is an exotic marketplace anywhere in the world. Therefore, it is a place of sale where second-hand goods are generally offered outdoors. In the past, the so-called Vietnamese markets were popular in Poland and other Eastern and Central European countries, where Vietnamese immigrants or their descendants were the sellers offering low-priced, low-quality goods, including clothes, shoes, jewellery, electronics and others;
5) **Annual occasional fairs** – commonly a fair is a type of market with strong local traditions. It is a one-time fair that usually occurs only once a year. Its duration is usually several days or even more than a week. The marketplace is also associated with various festivities, such as Christmas and Easter. The name of the fair is often derived from these festivals. Mostly occasional products are sold here.

4. Operation of marketplaces in Cieszyn

The organisational, administrative and functional features of Cieszyn's bazaars have been changing over the years. Three characteristic consumer-oriented subsystems can be distinguished in the spatial and commercial structure of Cieszyn (Kulczyńska, Matykowski, 2008). The first one is the traditional small-retail trade, which existed in the 1990s. Subsequently, marketplaces - the second subsystem, particularly popular in border towns - appeared alongside permanent retail outlets already in the early 1990s (Matykowski, Schaefer, 1996). This traditional trade structure was significantly changed at the turn of the 20th and 21st centuries, when supermarkets appeared in the commercial space of Cieszyn - the third subsystem, modernising the city's existing trade system. The emergence of large-format retail outlets in the city space led, over time, to a decline in the number of small-retail outlets (as well as stalls in marketplaces), which could not withstand the competition with supermarkets. This process confirms the trends observed by other researchers on the evolution of marketplace trade that this sales format is now only complementary to other forms of retailing (Hamulczuk, 2016; Wojdacki, 2016; Sojkin, Michalak, 2018) and does not play a dominant role as it did in the last decade of the 20th century. The gradual takeover of consumers by retail outlets has resulted in the number of marketplaces decreasing significantly and some disappearing from the urban space altogether, as documented by the figures of the CSO Local Data Bank. Between 2010 and 2020, the number of permanent markets decreased from 2235 to 2122, and seasonal markets from 6913 to 6248 (Ciechomski, 2022). In Cieszyn, the number of markets decreased from 9 in 1995 to 6 in 2022. Still in the 1990s, the markets on 3 Maja Street and at the Amphitheatre, and later the market on Rzeźnicza Street, ceased their activities.

An important factor determining the functional possibilities of market trade is the qualitative structure of marketplaces. Based on statistical data made available by the branch of the Central Statistical Office in Bielsko-Biała, an analysis of changes in the number and area of marketplaces and permanent small-retail outlets in total in the period between 2018-2022 was conducted. All marketplaces operating in the city of Cieszyn (in the number of 6) are marketplaces with predominance of small-retail sales. Some of them typologically can be categorised as indoor markets and the rest operate outdoors as open-air markets.

In the analysed period, there were six operating markets in Cieszyn, including four municipal markets, i.e. the manufactured market in Katowicka Street, the agri-food market in Stawowa Street, the Municipal Market Halls at 6 Stawowa Street and the places for trading in agri-food products in Stary Targ Street. In addition to municipal markets, there are also private markets in the city space: in Stawowa Street, which is neighbouring the municipal market in Katowicka Street, and the market in Łyska Avenue, which is very popular with customers.

The market in Katowicka Street and the market in Stawowa Street operate on Wednesdays and Saturdays, while the market in Łyska Avenue operates from Monday to Saturday.

The administration of municipal markets is carried out by the Municipal Markets Department, which is an organisational unit of the Town Hall in Cieszyn. It should be mentioned that the decrease in the number of markets in the examined period was also accompanied by a decrease in the sales area of the markets and a decrease in the number of sales outlets, as shown in Table 1.

Table 1.
Sales area of marketplaces and number of sales outlets in Cieszyn

Specification	2018	2019	2020	2021	2022
Area in m^2	9399	9399	8891	8147	7851
Total permanent sales outlets in Cieszyn	770	731	705	540	489
Permanent sales outlets in the markets	63	61	52	52	52

Source: Own study based on the Central Statistical Office [GUS] data.

When analysing the activity of Cieszyn's markets, it should be emphasised that the Czechs and Slovaks account for the majority of customers there. Therefore, one can observe a high number of advertisements or signs in Czech, on which the names and prices of goods are displayed. In addition, moving around the space of Cieszyn's markets, one's attention is drawn to the widely used, although somewhat clumsily applied Czech language, which is used by Polish salesmen who want to make shopping easier for foreign customers. At Cieszyn's markets it is possible to pay in the Polish zloty, the Czech koruna, the EU euro, and many outlets offer the possibility to pay by credit card.

On the other hand, in the light of the results of a survey carried out on a group of 119 inhabitants of Cieszyn, respondents declare a generally positive attitude to the existence of bazaars in the city (66%), only 8% considered that Cieszyn's bazaars are a negative phenomenon, and 25% had no opinion on the subject (Kulczyńska, 2020, p. 38). Residents who positively perceive the functioning of markets in the city space most frequently indicated as arguments the lower prices of goods (23%), the good atmosphere for shopping (20%), the wide selection of goods (18%), the high quality of products (12%) and the favourable location of the bazaar (10%). On the other hand, respondents with a negative attitude to Cieszyn's bazaars, as a reason for this, indicated the poor organisation of the market, in particular the lack of parking spaces (69%), excessive noise (42%) and littering in the market square (36%). Also a small number of respondents indicated a low sense of security and fear of theft (22%). The quoted research also found that the residents of Cieszyn, despite the declining role of markets, still shop there (85%). Respondents buy both groceries (62%) and manufactured goods (38%). Among grocery items, vegetables (29%) and fruit (24%) were the most frequently purchased, as their availability was the greatest and their quality the highest.

A new phase in the operation of the marketplaces in Cieszyn turned out to be 2023, with a noticeable increase in the number of Czech and Slovak customers, who are attracted by the possibility of doing their shopping much more cheaply, not only at the markets, but also in supermarkets and petrol stations. Czech public media estimate that shopping in Poland allows Czechs to save at least one third of the money they spend. Foreign customers appreciate not only the significantly lower prices, but also the wide range of tasty food products and a wide selection of fashionable clothing.

5. Conclusions

In the future, globalisation as well as modern information and communication technologies will pose a major challenge to modern commerce. They will radically affect consumer preferences as well as where and how people shop. In other words, they will determine the development of new lifestyles and consumption. The trend towards shopping at home has been growing for some time now. In part, this is a consequence of the COVID-19 pandemic. Overall, however, such a situation could ultimately have a devastating impact on traditional small-retail formats, including merchant and market trade. In this context, it is worth looking at marketplaces in the light of their future. On the other hand, the emergence of modern shopping centres also has a negative impact on market sales. However, in the post-pandemic year 2023, Cieszyn's markets have again become very popular and attractive for a certain group of people. In doing so, they have had to adapt their offers to the preferences of Czech and Slovak customers and transform themselves from archaic shopping areas into attractive boutiques that offer not only local fresh quality products, but also goods perceived as fashionable and exclusive by customers from other countries.

It can be presumed that if a visit to the market continues to be perceived by customers as an attractive way of shopping, which provides the advantage of negotiating the price and acquiring products of the expected value for a low payment, this form of trade will continue to function in the border town of Cieszyn.

It is a wonder that markets have survived over the last few thousand years in different civilisations, despite them appearing and disappearing, as have societies, which have changed considerably - as have their demands. However, markets are popular and, despite the passage of time, they continue to operate.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

ENVIRONMENTAL AND SOCIAL ASPECTS OF SUSTAINABLE DEVELOPMENT – A CASE STUDY OF FOOD COMPANIES INCLUDING CONSUMER ATTITUDES AND BEHAVIOR

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Purpose: Competing for increasing numbers and more conscious consumers, as well as the emergence of new generations on the market, necessitates the continuous improvement of knowledge about pro-environmental and pro-social consumer attitudes and behavior. Therefore, this study attempts to: - identify the type of actions taken within the framework of sustainable development by selected food brands, - assess the pro-environmental and pro-social attitudes of young consumers purchasing food products, - determine whether environmental and social aspects are a criterion for food choice among young consumers.
Design/methodology/approach: The research was conducted in two stages. In the first, an analysis was made of messages posted on the websites of selected food brands. In the second, a quantitative survey was conducted among young consumers (n = 420) by indirect online survey measurement, using a survey questionnaire posted on Google form.
Findings: Young consumers have positive pro-environmental and pro-social attitudes. According to the respondents, the social involvement of companies influences the positive image and popularity of the products offered. Nevertheless, almost half of all consumers declared reluctance to pay more for the purchase of goods whose producers are involved in philanthropic and pro-environmental activities. This suggests that, in the opinion of this segment of respondents, it is entrepreneurs who should take financial responsibility for their actions by not raising the prices of the products they sell. It has been shown that concern for others by purchasing socially committed brands and the environmental friendliness of the product have lower rankings in the hierarchy of food product selection factors.
Research limitations/implications: The research was conducted on a narrow subject basis, so the results obtained cannot be generalized to the entire segment of young consumers. The scope of the presented research is also limited. The results of the research should be considered as a pilot.
Practical implications: The findings are relevant to managers implementing brand sustainability campaigns in the food production sector. They point to the need to continue such activities aimed at fostering altruistic and pro-environmental attitudes among the society.
Originality/value: This study highlights that sustainability encompasses a wide range of activities with diverse ways of communicating value to consumers.

Keywords: sustainability, consumer, pro-environmental attidues, pro-social attitudes, food industry.
Category of the paper: marketing research.

1. Introduction

The issue of combining non-economic issues (such as incorporating social goals into operating strategies or developing new products taking into account minimizing their negative impact on the environment) with running a business has been practiced for a long time (Gkogkos et al., 2023). For several decades now, there has been an increased discussion about the need to build a sustainable business model with a responsible way of increasing income at its core (Sovacool et al., 2021; Acampora et al., 2023). Fundamental influence on such changes taking place in the industry has been exerted by the concept of sustainable development (Report of the World Commission..., 1987) and the social responsibility of organizations operating in the market (ISO 26000; Communication from the Commission to the European Parliament..., 2011), which provide theoretical foundations and set the main directions for the strategies and operating practices of modern companies (Maas, Reniers, 2014; Engert, Baumgartner, 2016; Rudnicka, 2018). Companies, investors, NGOs, governments and other stakeholders are increasingly taking ESG factors (E - environmental factors, S - social factors, G - corporate governance) into account when making investment or regulatory decisions. Integrating these factors helps create more sustainable, ethical and socially responsible business models (Aktaş, Demirel, 2021). Environmental factors refer to aspects related to environmental protection and sustainable use of resources. They are related to climate change, energy consumption, greenhouse gas emissions, water management, waste management and biodiversity conservation, among others (Calisto Friant et al., 2021; Ciliberti et al., 2022). Social factors refer to those aspects that affect society and the organization's stakeholders. These include human rights, working conditions, diversity, social inclusion, community relations, employee health and safety, and community involvement, among others (Radziwon, Bogers, 2019; Akanmu, Norshahrizan, 2022). Corporate governance refers to aspects of an organization's management and structure and includes factors such as ethics, regulatory compliance, corporate responsibility, independence of regulators, transparency in management, accountability, risk management and safeguarding shareholders' interests (Yun et al., 2019; Manikas et al., 2022).

Corporate sustainability is a path of socio-economic development that ensures the realization of sustainable development goals. The most important factors that ensure the creation of a sustainable and sustainable enterprise are sustainable production and consumption. It is increasingly important to modernize production, ensuring the optimization of processes, reducing energy and materials, and on effective dialogue between entrepreneurs and state authorities (Liao et al., 2017; Lertpiromsuk et al., 2022). Sustainable development of enterprises, therefore, means taking measures aimed at achieving their fundamental economic goal and complementing it with issues related to taking care of the social and environmental aspects of its operation (in accordance with accepted environmental standards). The realization of a company's financial goals must take into account social and environmental aspects as the main areas of sustainable development (Dwivedi et al., 2021; Di Vaio et al., 2022a; Di Vaio et al., 2022b).

Corporate social responsibility (CSR) is one of the main factors that helps an organization to gain an advantage in the market (which is possible by gaining the trust and loyalty of consumers, also used in negotiations with contractors), increase consumer satisfaction, which will be a guarantee that they will not abandon the company's products. In addition, CSR is an effective tool for raising new capital as well as providing an opportunity to reduce costs as a result of risk mitigation and a positive impact on productivity and employee morale. Since an organization's activities also affect its contractors, it is obligated to meet their needs. For this to be feasible, CSR activities must be compatible with corporate decisions and resource allocation (Genedy, Sakr, 2017; Gamal et al., 2022).

Globally, the food sector is a major employer in most countries, and the European food chain provides a secure food supply for more than 400 million citizens. It is therefore an important economic sector for the European Union is also a key area of focus when considering sustainable development. There is constant pressure on food companies from external stakeholders, such as NGOs, customers or regulators to implement sustainable practices in their operations during all stages of production and throughout the supply chain (Grimm et al., 2014). The special role of the food sector is to ensure food security. However, agri-food production is responsible for 80% of global deforestation, 29% of greenhouse gas emissions, and consumes 70% of fresh water used in industry. The food sector encompasses a very wide range of economic activities of all kinds that result from the production, processing, transportation as well as consumption of food (Rosenzweig et al., 2021).

More and more companies operating in the food sector have quality management systems in place, thanks to which losses of materials as well as raw materials used in production are minimized as well as the number of defective products is significantly reduced. However, companies are engaging at every stage of creating and producing goods increasingly conscious employees who are environmentally and socially sensitive and act in accordance with buyers' expectations. For full implementation, it is also essential that individual business partners also respect the same assumptions about quality standards, in accordance with the principles of sustainable development. Companies focus on minimizing the use of energy and all kinds of polluting chemicals during production processes (Thyberg, Tonjes, 2016; Grinberga-Zalite, Zvirbule, 2022; Mostaghimi, Behnamian, 2023). Effective management of water resources in food industry enterprises is possible by increasing the efficiency of water use at each stage of operations by reducing the amount of water withdrawn per ton of product. Many food plants have a, "Water Mapping" project in place, using sensors and meters, so that the production process can be designed to reduce water consumption. Many enterprises also use water recycling or implement a closed loop system. Some enterprises with on-site water treatment plants can save water each year by using it to wash the production line (Liu et al., 2019; Cheng et al., 2021; Wang et al., 2021).

According to the Accenture Report (2022), more than 50% of surveyed food and beverage companies in Poland already measure their carbon footprint and have adopted reduction targets. In this regard, actions can be divided into those related to changing the ways in which energy is used (to increase energy efficiency), its origin towards renewable sources, and changes at the supplier level. All of the companies analyzed have adopted targets for reducing waste and water consumption. The organizations also cite the tenets of the Closed Circuit Economy, most notably its section on full product management, the use of all production waste, packaging and the redistribution of unsold products. A strong focus on replacing packaging with partially recycled, lighter, recyclable packaging and on changing the recovery system can be seen. Social goals, and focus mainly on issues of diversity management, plant safety and philanthropy. Unfortunately, only a handful of companies have tools to support concern for human rights in the supply chain, such as risk monitoring systems or complaint mechanisms. Animal welfare is a must-have item, as caring for animals, while not the main communication message, is an important corporate action, which is linked to growing consumer empathy in this area. All of the companies surveyed that use eggs in their production process have eliminated those that come from cage farming. Still a small number of companies have detailed data on deforestation prevention, although this is one of the industry's biggest challenges. Indeed, harnessing the sector's mitigation potential is critical to achieving emissions reduction targets. Key examples of companies' efforts in this area include purchases of certified soybeans and palm oil (Accenture Report, 2022).

Investments in sustainable sources of raw materials, emission reductions, sustainable packaging and attention to fair working conditions are just some elements of a comprehensive approach to sustainability in this industry. At the same time, responding to changing consumer attitudes, companies are adjusting their strategies, integrating sustainable practices into daily operations. As a result, the food industry is shaping a new sustainable business model that simultaneously cares about the environment, employees and local communities.

In the context of the issues presented, this paper attempts to:

- to identify the type of sustainability measures taken by selected food brands;
- to assess the relationship between the pro-environmental and pro-social attitudes of young consumers and the behavioral attitudes and declared intentions towards environmental and social issues;
- to determine whether environmental and social aspects are a criterion for the choice of food products among young consumers.

2. Subject and research methodology

The research was conducted in two stages. In the first stage of the research, messages posted on the websites of selected food brands (PepsiCo, Coca-Cola, Danone, Tymbark, Milka, Nestle) were analyzed in terms of their sustainability activities. The selection of brands was suggested by their global - international reach. In the second stage, surveys were conducted among young consumers purchasing the selected food brands (n = 420). A non-probabilistic sampling technique - convenience sampling - was used to select respondents for the survey sample (CAWI). The research was conducted by indirect online survey measurement method, using a survey questionnaire hosted on Google Form.

The questionnaire consisted of three thematic blocks. The first part related to assessing attitudes toward environmental and social issues (12 statements). The second part of the questionnaire concerned pro-environmental and pro-social behavior, including in the choice of food products (18 statements). In the third part, on the other hand, consumers declared future intentions for pro-environmental and pro-social behavior (3 statements). Respondents expressed their level of approval or disapproval, in relation to the statements posted using a 7-point Likert scale, with strong disagreement with the statement corresponding to a rating of 1, and strong agreement with it a rating of 7. The collected empirical material obtained from the survey was subjected to statistical analysis using Statistica 13.3 software. Basic statistics were calculated: mean values, standard deviations and median. R-Pearson correlation analysis was used to determine the strength and significance of the relationships between attitude, behavior and intention.

3. Results and discussion

3.1. Actions taken by selected food brands for sustainable development - a case study

In order to identify the sustainability activities undertaken by food brands, the selected brands were t.i. PepsiCo, Coca-Cola, Danone, Tymbark, Milka, Nestle. It was found that the range of activities carried out by the selected brands in the implementation of their CSR strategies, is very wide. Brands build their positive image based on activities concerning the consideration of social interests and environmental aspects.

PepsiCo's brand marketing communications show that it implements socially engaged marketing tools. PepsiCo, the manufacturer of the Pepsi-Cola brand, has been actively involved in corporate social responsibility (CSR) ventures for a long time. PepsiCo has committed to sustainable development, focusing on environmental and social issues. The company has set ambitious goals, such as a promise that 100% of the company's packaging will be recyclable by

2025. The company is investing in energy efficiency, aiming to reduce its carbon footprint. By modernizing production facilities and using renewable energy sources, PepsiCo aims to minimize its environmental impact. Given the critical importance of water to beverage production, PepsiCo is engaged in projects to conserve water resources. Through sustainable agricultural practices and investments in water-reducing technologies, the company is moving toward sustainable water management. PepsiCo works to benefit the community through a variety of initiatives. The company's "Performance with Purpose" program includes educational projects, support for local communities and the fight against hunger. PepsiCo also participates in various charitable programs, providing humanitarian aid for natural disasters. The company not only focuses on sustainability, but also on promoting healthy lifestyles. PepsiCo is implementing strategies to reduce the sugar and calorie content of its products, while developing a range of low-calorie products and healthy snacks. PepsiCo places importance on diversity and inclusion in the workplace. Through its Diversity and Inclusion programs, the company promotes equality of opportunity and eliminates barriers for employees of different ethnicities, genders and sexual orientations. PepsiCo's CSR activities reflect the company's commitment to sustainability, taking into account both environmental and social aspects. Through consistent investments in energy efficiency, water conservation, community support and the promotion of healthy lifestyles, PepsiCo is setting ambitious goals while adapting to the expectations of today's consumers and social norms. These CSR-oriented initiatives not only help minimize the company's impact on the environment, but also enhance the brand's positive image in the eyes of consumers.

A strong competitor to the aforementioned company is Coca-Cola, one of the largest companies in the global beverage market, which has been undertaking extensive corporate social responsibility (CSR) activities for years. Below is a brief analysis of the key areas in which Coca-Cola engages in CSR activities. Coca-Cola consistently strives for sustainability, as evidenced by its commitment to sustainable sources of raw materials. The company actively supports farmers working in responsible agricultural production programs, promoting sustainable farming practices. In the area of energy efficiency, Coca-Cola emphasizes the reduction of CO2 emissions. By investing in environmentally friendly technologies, such as refrigeration using natural gases, the company is taking steps to reduce its impact on climate change. The company is also committed to waste management, seeking to minimize packaging waste. The organization has introduced an innovative approach to recycling, and is working to increase consumer awareness of packaging recycling. The company works to benefit local communities through a variety of initiatives. Corporate social responsibility programs include support for education, health and the development of local communities. Coca-Cola also invests in projects to provide clean drinking water in areas where it operates. In response to the growing interest in healthy lifestyles, like its competitors, Coca-Cola has introduced a number of measures aimed at reducing the amount of sugar in its products. The company is also expanding its range of low-calorie beverages and has launched sugar-free products. Coca-Cola consistently promotes equality and diversity in the workplace. The company is actively committed to eliminating all forms of discrimination, creating a work environment that is open and accessible to employees from different social groups. Coca-Cola's CSR activities cover a range of areas, from sustainable management of raw materials to social investment and promotion of healthy lifestyles. Through these initiatives, the company not only cares about the environment and local communities, but also adapts to changing consumer expectations. The innovations it introduces, such as sustainable packaging and reducing sugar content, are not only a response to market trends, but also an expression of its commitment to corporate social responsibility. As a result, Coca-Cola is creating a positive brand image, which translates into the company's long-term success in the global market.

Danone has been committed to sustainability for years, which is an integral part of their business strategy. The organization not only provides food products, but also actively works to bring about positive social, environmental and economic change. Danone focuses on minimizing the environmental impact of its production. It implements innovative solutions, such as efficient water management, reducing energy consumption, and using environmentally friendly packaging. The company promotes healthy eating habits by offering products that are low in calories, low in sugar and high in nutritional value. It also introduces innovations, such as alternatives to traditional dairy products, to accommodate the diversity of dietary preferences. The company actively participates in the communities in which it operates. It supports educational, health and social programs to improve the quality of life in the local community. Danone is committed to developing sustainable practices throughout its supply chain. It works with suppliers and business partners to ensure ethical labor standards, minimize greenhouse gas emissions and reduce environmental impact. The company is investing in renewable energy projects. By using renewable energy, it reduces its carbon footprint and supports the development of greener technologies. Danone consistently develops packaging recycling programs to reduce plastic waste. It focuses on creating packaging that is more environmentally friendly and can be recycled more easily. As part of its operations, Danone supports farmers in transitioning to more sustainable practices. This includes, among other things, training programs, access to modern agricultural technologies and participation in sustainable agriculture initiatives. Danone regularly publishes sustainability reports outlining its goals, progress and targets for the future. This transparent approach helps build trust with consumers and business partners. Danone not only provides food products, but also acts as a leader of a socially responsible company, taking concrete steps toward sustainability. This commitment to responsible business positively impacts society, the environment and the company's long-term success.

Another company analyzed was Tymbark. Over the years, this organization, as a brand known for its juices and beverages, has been actively engaged in sustainability efforts. The company directs its efforts not only to developing its product range, but also to reducing the environmental impact of its operations, improving food quality and supporting local communities. Tymbark focuses on introducing innovations to minimize the negative impact of production on the environment. It is optimizing the use of water, electricity and other resources, aiming for more efficient production processes. The company is working to reduce waste through efficient resource management. It also strives to reduce the amount of energy used, promoting conservation and the use of renewable energy sources wherever possible. Tymbark is committed to designing packaging that is more environmentally friendly. It implements solutions related to recycling and plastic reduction, while taking care of the aesthetics and functionality of packaging. As part of its offering, Tymbark is introducing products with low environmental impact. This includes, for example, juices with low water consumption in the production process or products without added artificial substances. Tymbark is involved in community projects at the local level. This could include support for local schools, cultural institutions or community projects that help improve the quality of life of the local community. The company not only offers products, but also promotes healthy lifestyles. It supports educational campaigns on healthy eating, physical activity and overall well-being. Tymbark works with suppliers and business partners to promote sustainable practices at every stage of the supply chain. This includes both raw materials and logistics processes. The company regularly communicates its sustainability goals and progress toward them. It creates channels of communication with customers to emphasize its commitment to responsible business. By innovating, supporting local communities and being environmentally conscious, the company aims to create a positive impact on the world and build a sustainable brand.

Over the years, Milka, as a well-known chocolate brand, has undertaken numerous sustainability initiatives. The company is not only focused on producing high-quality products, but is also committed to reducing its environmental impact, supporting local communities and promoting ethical business practices. Milka works toward sustainable production, focusing on efficient use of resources, reducing greenhouse gas emissions and optimizing production processes from an environmental perspective. The company aims to reduce its use of water, electricity and other resources by implementing efficient technologies and practices. Milka is actively working to reduce the amount of plastic in its packaging, looking for alternative, more environmentally friendly materials. In addition, the company promotes the principles of recycling and educates consumers on the proper handling of packaging. Milka pays attention to the origin of the raw materials used in chocolate production. It works with suppliers that adhere to sustainable farming standards, taking care to ensure fair working conditions and minimize environmental impact. The company is involved in social projects at the local level, offering financial and logistical support for initiatives related to education, health and development of local communities. The organization implements educational programs aimed at consumers and local communities, promoting responsible attitudes, healthy lifestyles and informed purchasing choices. The brand not only focuses on sustainable business practices, but also inspires consumers to lead more sustainable lifestyles, promoting conscious shopping and minimizing waste, among other things. The company regularly reports on its sustainability progress, sharing information on its goals, initiatives and results. This transparency builds trust with consumers and business partners. Milka, through its sustainable practices, not only provides consumers with tasty products, but also shapes its brand as a responsible market participant. Sustainability has become an integral part of Milka's business strategy, which allows it to create a positive impact on society and the environment.

As one of the world's largest food companies, Nestlé is undertaking a variety of sustainability efforts. The company not only provides a wide range of food products, but also actively works to minimize its environmental impact, improve food quality, support local communities and promote ethical business practices. The organization focuses on sustainable production, aiming to minimize the use of water, electricity and other natural resources. The company implements innovative solutions, such as efficient water management in the production process. The company strives for efficient resource management, reducing greenhouse gas emissions and cutting energy consumption. It is working to use renewable energy sources wherever possible. Nestlé is taking steps toward sustainable packaging, aiming to reduce plastic and promoting recycling. It is also innovating, such as designing environmentally friendly packaging. The company is committed to sourcing food ingredients sustainably, working with suppliers that adhere to environmental and ethical standards. It supports farmers in transitioning to more sustainable practices. Nestlé actively participates in the communities in which it operates. It supports educational, health and social programs, aiding the development of local communities. The company implements educational programs, promoting healthy lifestyles, nutrition education and professional skills in the communities where it operates. Nestlé not only supplies food products, but also engages in campaigns to promote healthy lifestyles, paying attention to nutrition, physical activity and overall well-being. The company is committed to implementing sustainable practices throughout the supply chain, from raw material producers to distributors, paying attention to ethical labor standards. Nestlé invests in renewable energy projects, supporting the development of greener technologies. The company regularly publishes sustainability progress reports, sharing information on its sustainability goals, challenges and actions. Nestlé is taking decisive steps toward sustainability, seeking to integrate environmental, social and economic aspects into its operations. This commitment to sustainability is crucial for a company with global reach, affecting the lives of millions of people

3.2. Pro-environmental and pro-social attitudes and behavior – consumer research

Table 1 includes results relating to attitudes (statements 1.1-1.12), behaviors (statements 2.1-2.18) and declared pro-environmental and pro-social intentions of consumers (statements 3.1-3.3). As a result of the survey, it was noted that young respondents showed positive pro-environmental and pro-social attitudes (Table 1). According to the respondents, businesses should engage in pro-environmental and philanthropic actions (mean score 5.42, M = 6), social involvement of businesses affects the positive image and popularity of their products (mean score 5.52, M = 6). Respondents also felt that companies/brands should clearly communicate to consumers that they participate in social initiatives (mean score 5.43, M = 6), and it is appropriate to inform consumers about philanthropic and pro-environmental activities, e.g. on product packaging (mean score 5.31, M = 6). When considering pro-environmental and pro-social behavior, it was noted that price (mean score of 6.56, M = 6) and functional value related to quality (mean score of 6.22, M = 7) are the most important factors for a young consumer when purchasing food products. On the other hand, environmental (mean score of 5.10, M = 5) and social (mean score of 4.53, M = 5) values ranked far lower in importance of food product selection factors. Analyzing declared intentions to behave towards environmental and social issues, it was found that young people most often show an undecided/neutral attitude towards supporting philanthropic and environmental activities of businesses (M = 4), while respondents most often expressed a desire to buy products whose sales proceeds support social initiatives (mean score 5.14, M = 5).

Table 1.
Pro-environmental and pro-social attitudes and behaviors of young consumers

Variables	Mean	SD	Median
Consumer attitudes towards environmental and social issues			
1.1. I know brands that are socially committed, i.e. brands that, for example: when producing goods, care about the environment, support charitable organizations, make donations to social causes, provide decent values	4,83	1,59	5
1.2. I have come across information about social engagement of companies/brands on their websites	5,18	1,46	5
1.3. I have come across information about social commitment of companies/brands on product packaging	4,93	1,49	5
1.4. I believe that entrepreneurs should engage in pro-environmental and philanthropic actions	5,42	1,36	6
1.5. In my opinion, brands' giving to philanthropic and pro-environmental campaigns should be a more frequent occurrence	5,38	1,44	5
1.6. I believe that social involvement of companies affects the positive image and popularity of their products	5,52	1,34	6
1.7. I believe that companies/brands should clearly communicate to consumers that they participate in social initiatives	5,43	1,46	6
1.8. Communicating/informing consumers about philanthropic and pro-environmental activities, e.g., on product packaging, I consider appropriate	5,31	1,39	6
1.9. The activities of socially engaged enterprises are important to me	4,75	1,48	5
1.10. I value the products of brands that engage in social campaigns	5,13	1,41	5
1.11. I am sensitive to environmental issues	4,94	1,51	5
1.12. I think of myself as someone who is concerned about ethical issues	4,93	1,46	5
Pro-environmental and pro-social behavior			
2.1. I try to choose environmentally friendly brands/products	5,02	1,39	5
2.2. I often buy products packaged in an environmentally friendly way	4,89	1,46	5
2.3. I buy fair trade products where fair wage and labor conditions have been ensured in their production	4,63	1,43	5
2.4. I take into account the information on product packaging or labels regarding social issues when purchasing goods	4,38	1,60	5
2.5. I happened to buy products marked with a symbol supporting some social action	5,26	1,37	5

Cont. table 1.

2.6. When I have a choice between two products I buy the one that is less harmful to the environment	5,02	1,55	5
2.7. When I have a choice between two products I buy the one which products are recycled	4,65	1,51	5
2.8. When I have a choice between two products I buy the one from the sale of which some part of the income is donated to social initiatives	4,77	1,44	5
2.9. I willingly buy products of socially responsible brands	4,84	1,38	5
2.10. By buying products whose producers support social initiatives I feel socially responsible, care about the environment, contribute to helping others	4,88	1,51	5
2.11. When buying food products I take into account: price	6,56	1,75	6
2.12. Quality (sensory characteristics, naturalness, safety, nutritional value, composition, expiration date for consumption, certificates)	6,22	1,05	7
2.13. Packaging (size, aesthetics, material used)	5,19	1,27	5
2.14. Product brand (confidence in the brand)	5,38	1,33	6
2.15. Country of origin	4,61	1,65	5
2.16. Promotion and discounting	5,62	1,28	6
2.17. Environmentally friendly product	5,10	1,42	5
2.18. Manufacturer's involvement in charitable activities	4,53	1,47	5
Intentions for pro-social and pro-environmental behavior			
3.1. I am willing to pay a higher price for goods whose producers are involved in philanthropic activities	4,09	1,55	4
3.2. I am ready to pay a higher price for goods whose producers are involved in pro-environmental activities	4,22	1,65	4
3.3. I am ready to buy products marked with a symbol supporting some social action	5,14	1,35	5

SD - standard deviation.

Source: own research.

Tables 2a and 2b show the correlations between the pro-environmental and pro-social attitudes of young consumers and behaviors and stated intentions to behave. In most of the analyzed cases, statistically significant correlation relationships ($p < 0.01$) were recorded between the studied variables. The correlation coefficients recorded most often ranged from 0.3 to 0.5, indicating a moderate degree of correlation. It was found that people familiar with socially engaged brands think of themselves as someone who cares about ethical issues ($r = 0.42$), are sensitive to environmental issues ($r = 0.45$) and value products from socially engaged brands ($r = 0.48$). They happen to purchase products bearing a symbol supporting social initiatives ($r = 0.53$). These people when given a choice between two products buy the one that is less harmful to the environment ($r = 50$). In turn, when purchasing food products in the hierarchy of choice attributes, environmental friendliness is important ($r = 0.39$) next to the manufacturer's commitment to charity ($r = 0.29$) and quality distinctions ($r = 0.30$). In addition, consumers familiar with socially committed brands declare future intentions to purchase products that support social actions ($r = 0.45$), are willing to pay a higher price for goods whose manufacturers are involved in pro-environmental activities ($r = 0.41$) and philanthropic activities ($r = 0.39$). The study found that people willing to buy products from socially responsible brands are willing to pay a higher price for products that support philanthropic ($r = 0.60$), environmental ($r = 0.55$), and social ($r = 0.66$) activities. It was also found that those who declare future support for social and environmental initiatives when purchasing food products take into account the manufacturer's commitment to charity and the product's features in terms of environmental friendliness.

Table 2a.
Relationships between pro-environmental and pro-social attitudes of young consumers and behaviors and stated intentions to behave

Variables	Variables											
	1.1.	1.2.	1.3.	1.4.	1.5.	1.6.	1.7.	1.8.	1.9.	1.10,	1.11.	1.12.
1.1.	1,00											
1.2.	0,52	1,00										
1.3.	0,52	0,56	1,00									
1.4.	0,47	0,42	0,39	1,00								
1.5.	0,48	0,40	0,44	0,69	1,00							
1.6.	0,45	0,42	0,49	0,60	0,64	1,00						
1.7.	0,45	0,40	0,46	0,59	0,69	0,60	1,00					
1.8.	0,51	0,41	0,51	0,58	0,63	0,56	0,65	1,00				
1.9.	0,50	0,40	0,39	0,58	0,53	0,52	0,57	0,53	1,00			
1.10,	0,48	0,40	0,45	0,68	0,64	0,60	0,60	0,57	0,66	1,00		
1.11.	0,45	0,35	0,35	0,54	0,58	0,45	0,49	0,47	0,55	0,53	1,00	
1.12.	0,42	0,38	0,36	0,50	0,54	0,44	0,45	0,46	0,56	0,48	0,62	1,00
2.1.	0,48	0,31	0,36	0,56	0,57	0,50	0,50	0,47	0,56	0,57	0,64	0,53
2.2.	0,48	0,43	0,34	0,49	0,53	0,45	0,53	0,48	0,58	0,51	0,54	0,51
2.3.	0,42	0,36	0,33	0,45	0,47	0,40	0,47	0,45	0,54	0,47	0,47	0,49
2.4.	0,35	0,31	0,32	0,50	0,47	0,45	0,44	0,44	0,55	0,54	0,49	0,51
2.5.	0,53	0,50	0,52	0,50	0,53	0,58	0,56	0,54	0,47	0,56	0,45	0,43
2.6.	0,50	0,35	0,42	0,57	0,59	0,53	0,49	0,50	0,57	0,52	0,64	0,57
2.7.	0,45	0,28	0,34	0,49	0,57	0,46	0,48	0,39	0,52	0,49	0,60	0,49
2.8.	0,44	0,35	0,34	0,52	0,54	0,55	0,50	0,44	0,52	0,49	0,49	0,49
2.9.	0,46	0,42	0,48	0,57	0,61	0,59	0,59	0,53	0,64	0,61	0,53	0,57
2.10.	0,46	0,36	0,35	0,60	0,59	0,55	0,57	0,49	0,65	0,70	0,52	0,55
2.11.	-0,05	-0,04	-0,06	-0,04	-0,07	-0,12	-0,06	-0,05	-0,03	-0,03	-0,02	-0,04
2.12.	0,30	0,25	0,28	0,32	0,34	0,34	0,28	0,32	0,20	0,32	0,24	0,22
2.13.	0,16	0,04	0,08	0,18	0,17	0,17	0,18	0,13	0,20	0,22	0,22	0,14
2.14.	0,15	0,10	0,17	0,14	0,15	0,20	0,14	0,17	0,11	0,26	0,10	0,18
2.15.	0,20	0,08	0,08	0,05	0,10	0,05	0,08	0,11	0,20	0,12	0,24	0,18
2.16.	0,08	0,07	0,06	0,15	0,23	0,16	0,15	0,19	0,03	0,17	0,07	0,10
2.17.	0,39	0,20	0,24	0,42	0,46	0,31	0,37	0,33	0,50	0,48	0,52	0,47
2.18.	0,29	0,15	0,25	0,34	0,33	0,25	0,33	0,32	0,43	0,46	0,36	0,39
3.1.	0,39	0,31	0,38	0,46	0,52	0,42	0,43	0,46	0,54	0,49	0,48	0,54
3.2.	0,41	0,28	0,28	0,48	0,49	0,41	0,37	0,43	0,56	0,50	0,54	0,51
3.3.	0,45	0,43	0,46	0,62	0,65	0,59	0,66	0,58	0,58	0,65	0,49	0,53

Source: own research.

The results obtained confirm earlier studies (Radzyminska, Garbowska, 2023; Radzyminska, 2021). In the research on the factors of choice of clothing brands (Radzyminska, Garbowska, 2023), it was shown that concern for others by purchasing socially committed brands and the environmental friendliness of the product have lower positions in the hierarchy of other choice factors, especially functional values. This indicates that these values are side benefits in the decision-making process of young consumers. In contrast, another study found (Radzyminska, 2021) that the vast majority of young consumers have positive attitudes toward socially committed brands/companies. It was also found that the vast majority of them happened to buy products whose sales proceeds supported a social initiative. In addition, an overwhelming percentage of respondents expressed a desire to purchase socially committed brands in the future. Nevertheless, nearly half of all consumers were ambivalent or negative about incurring higher costs for purchasing goods whose manufacturers are involved in philanthropic activities. This suggests that, in the opinion of this segment of respondents, it is entrepreneurs who should take financial responsibility for their actions by not raising the prices of the products they sell.

Table 2b.
Relationships between pro-environmental and pro-social attitudes of young consumers and behaviors and stated intentions to behave

Variables	Variables																				
	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	2.11	2.12	2.13	2.14	2.15	2.16	2.17	2.18	3.1	3.2	3.3
2.1.	1,00																				
2.2.	0,60	1,00																			
2.3.	0,48	0,56	1,00																		
2.4.	0,50	0,46	0,48	1,00																	
2.5.	0,50	0,45	0,42	0,47	1,00																
2.6.	0,69	0,60	0,57	0,56	0,50	1,00															
2.7.	0,64	0,57	0,52	0,48	0,47	0,67	1,00														
2.8.	0,56	0,49	0,52	0,55	0,53	0,64	0,58	1,00													
2.9.	0,60	0,56	0,54	0,52	0,55	0,62	0,57	0,57	1,00												
2.10.	0,59	0,54	0,51	0,49	0,43	0,58	0,52	0,51	0,59	1,00											
2.11.	-0,05	-0,02	0,03	-0,02	-0,07	-0,08	-0,03	-0,07	-0,05	-0,04	1,00										
2.12.	0,23	0,22	0,22	0,20	0,33	0,30	0,23	0,22	0,30	0,23	-0,26	1,00									
2.13.	0,27	0,19	0,21	0,24	0,22	0,23	0,29	0,13	0,23	0,19	-0,03	0,31	1,00								
2.14.	0,13	0,10	0,18	0,11	0,23	0,11	0,10	0,18	0,17	0,20	-0,07	0,36	0,41	1,00							
2.15.	0,28	0,15	0,20	0,26	0,17	0,23	0,25	0,22	0,19	0,14	0,03	0,18	0,37	0,31	1,00						
2.16.	0,04	0,13	0,13	0,00	0,14	0,04	0,10	0,08	0,14	0,12	-0,10	0,35	0,20	0,30	0,15	1,00					
2.17.	0,56	0,48	0,47	0,43	0,40	0,58	0,59	0,40	0,48	0,50	-0,08	0,37	0,47	0,32	0,49	0,26	1,00				
2.18.	0,40	0,40	0,41	0,39	0,29	0,40	0,45	0,36	0,41	0,40	-0,02	0,21	0,40	0,37	0,46	0,20	0,71	1,00			
3.1.	0,53	0,50	0,48	0,54	0,44	0,57	0,52	0,58	0,60	0,48	-0,02	0,15	0,18	0,16	0,23	-0,01	0,47	0,45	1,00		
3.2.	0,55	0,53	0,50	0,55	0,37	0,60	0,52	0,52	0,55	0,55	0,00	0,13	0,17	0,08	0,20	0,01	0,48	0,40	0,71	1,00	
3.3.	0,56	0,55	0,50	0,45	0,60	0,54	0,51	0,58	0,66	0,61	-0,05	0,33	0,22	0,18	0,12	0,16	0,40	0,36	0,50	0,45	1,00

Source: own research.

As Szuszkiewicz (2023) points out, due to the skeptical attitude of informed consumers toward traditional marketing messages, companies are increasingly recognizing the need to change the content created to capture customers' attention and build brand loyalty. Such messages center around the concepts of sustainability, business and consumption, emphasize the need to incorporate such patterns into everyday life, and educate on how they can be implemented. Particular importance is also given to disclosing information about the origin of the components that make up products, the ways in which they are produced, their impact on the environment and communities, as well as additional CSR activities of companies. Such information can take the form of both advertising content and environmental and social reporting, both of which are taken into account by consumers in the purchasing process (García-Jurado et al., 2021; Hashmi et al., 2021). Consumers, in addition to being recipients of information, are also co-creators of information. This is particularly true for the category of prosumers, actively engaged in the process of sharing opinions and knowledge with other customers, as well as in the collaborative creation of value in the enterprise by creating and sharing content, product and brand suggestions, or eventually new ideas or concepts, operating in an open source and open innovation environment. Such consumers are a very valuable resource for businesses. Economic theory and practice provide a number of concepts and tools for using the phenomena in question to achieve the goals set by organizations, including building innovation potential and competitiveness, corporate and brand image, customer loyalty and commitment. Among them, the concepts of collaborative marketing, oriented towards co-creating value with the customer, and marketing based on educating consumers should be highlighted. Also associated with these concepts are such approaches as service logic in marketing, platformization, crowdsourcing, peer production, open innovation, social marketing and social reporting.

According to a study by Lassoued et al. (2023), a third of the Canadians they surveyed defined sustainable food as food that is of good quality, safe and healthy (a social dimension) (34%) or believed that sustainable food contributes to local economies, such as through lower production costs for producers (32%). Only 3% said they did not know what sustainable food meant. When asked about the importance of sustainable food, most respondents (80%) linked the concept to its "green" dimension, in which sustainable food protects nature, including the diversity of both plants and animals, and avoids destroying or wasting natural resources. These results suggest that a third of Canadians surveyed have a complete picture or holistic view of sustainable food with integrated environmental, social and economic aspects. However, the majority lacks adequate knowledge of sustainability because they do not seem to be able to interpret it as a tripartite concept; rather, they maintain a narrow understanding limited to the environmental dimension. About two-thirds of respondents indicated that they do not consciously look for sustainable food products at the grocery store, compared to 28% who do. The results show that Canadian consumers have an incomplete view of food sustainability, as the environmental aspect dominates. The social and economic dimensions were not as important in the analysis, as only a third of the sample understood the multifaceted nature of food sustainability (Burnier et al., 2021; van Busssel et al., 2022; Lassoued et al., 2023).

Foroudi et al. (2022) conceptualized their research on sustainability on the basis of seven components (i.e., social/community well-being, affordable and clean energy consumption, economic growth, responsible consumption, responsible production, sustainable industrialization and innovation, and gender equality). They showed that both responsible consumption and production are important to the study population. Affordable and clean energy consumption, responsible consumption and responsible production highlight the importance of sustainable consumption and production (Foroudi et al., 2022).

A study conducted by Norton et al. (2022) among UK consumers found that they were always aware of proper recycling procedures. For example, not all respondents were aware that black trays cannot be recycled, and that compostable trays must be composted in an industrial composter. These authors showed that correctly labeling a food product's packaging with recyclability can promote trust and be linked to perceived environmental friendliness or act as a preference factor for sustainable materials (Norton et al., 2022).

Conclusions

Studies of selected food brands have made it possible to identify the types of sustainability measures taken. It was found that among the sustainability measures, one of the main aspects is investment in renewable energy sources to reduce CO_2 reduction into the environment. All companies use recycled materials, and PepsiCo declared that by 2025 all packaging was recyclable. The organizations also engage in charitable and social causes by supporting areas affected by natural disasters as well as promoting healthy lifestyles among consumers.

In turn, the results of the surveys presented indicate that young consumers have positive pro-environmental and pro-social attitudes. According to the respondents, the social involvement of companies influences the positive image and popularity of the products offered. Nevertheless, almost half of all consumers declared their reluctance to pay more for the purchase of goods whose manufacturers are involved in philanthropic and pro-environmental activities. This suggests that, in the opinion of this segment of respondents, it is entrepreneurs who should take financial responsibility for their actions by not raising the prices of the products they sell. It has been shown that concern for others by purchasing socially committed brands and the environmental friendliness of the product have lower rankings in the hierarchy of food product selection factors. The results obtained have significance for managers implementing sustainable brand campaigns in the food production sector. They indicate the need to continue such activities aimed at shaping altruistic and pro-environmental attitudes among the public.

The study presented here has some limitations. The research was conducted on a narrow subject basis, so the results obtained cannot be generalized to the segment of young consumers. The scope of the presented research is also limited. Further research is needed that establishes the profile of the socially responsible consumer, taking into account psychographic characteristics and features derived from the social structure.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHINGHOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

UNRAVELING BUSINESS ETHICS: UNETHICAL PRACTICES WITHIN THE CONTEXT OF CORPORATE SOCIAL RESPONSIBILITY

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Purpose: This article aims to conduct a rigorous examination of the literature surrounding Corporate Social Responsibility (CSR). Criticisms of the strategy will be articulated and substantiated through concrete examples from the business sphere. Additionally, the delineation of alternative approaches for implementing the tenets of responsible business is emphasized.
Design/methodology/approach: Grounded in a critical literature review, the methodology involves investigating various forms of CSR-washing, using examples to examine different definitions and implications. Additionally, CSR reports are scrutinized to identify disparities between declarations and actual situations. Furthermore, examples for each type of CSR-washing are meticulously selected, and a guidance list is created to prevent such occurrences.
Findings: Derived from the extant literature, unethical practices have been categorized and designated. Moreover, specific instances have been referenced to underscore the distinctions among various manifestations of "washing".
Social implications: The foundational literature integral to subsequent deliberations on the Corporate Social Responsibility (CSR) concept has been restricted to publications available in both English and Polish. The illustrative case studies, which highlight instances of "washing", are gleaned from a thorough analysis of academic literature on CSR-washing, practitioner documents, and activist discourse, along with notable actions described in the media.
Originality/value: This article undertakes a critical analysis of Corporate Social Responsibility (CSR) by elucidating key imperatives and delineating inequitable practices within the purview of the supply side, using a case study as an illustrative vehicle. Additionally, it endeavors to unveil alternative paradigms for responsible business conduct, thereby contributing to the discourse on the depreciation of CSR's positive standing.
Keywords: CSR, green washing, social washing, rainbow washing, diversity washing.
Category of the paper: Conceptual work.

1. Introduction

The 21st century has brought about significant changes in the business landscape, particularly with the increased accessibility of comprehensive market information, leading to heightened consumer awareness in purchasing decisions. Contemporary manufacturers are now required to meet additional demands from the consumer side in order to distinguish themselves. The substantial theoretical and empirical literature on corporate social responsibility (CSR) and business ethics in developed Western economies indicates considerable attention from both academics and practitioners (Koleva, Meadows, 2021). However, there is limited evidence of the actual implementation of CSR and business ethics.

The ability to verify the accuracy of information coming from the supply side presents an added challenge to unscrupulous marketing efforts, as companies seek to present themselves favorably to the public. Despite being a key aspect of responsible business, Corporate Social Responsibility (CSR) has faced criticism from both the scientific and business communities due to inadequate implementation. This criticism has given rise to various new instances of “washing”, indicating the decline of CSR in specific sectors of activity.

As noted by Gatti, Seele, and Rademacher (2019), the concept of voluntary CSR remains widespread in CSR literature and seems to represent a gray area that allows for deceptive "green" communication. Therefore, the research question aims to delineate the concept of "washing" within the context of Corporate Social Responsibility (CSR) and furnish examples illustrating various types of washing.

2. Trust and Engagement in Corporate Social Responsibility Communication

In recent years, the examination of Corporate Social Responsibility (CSR) has garnered attention from both scholars and organizations, revealing two divergent perspectives. According to Dhanesh (2015), entities like the World Business Council for Sustainable Development perceive CSR as a mechanism for businesses to contribute to economic development while simultaneously enhancing the well-being of their workforces, local communities, and society at large (e.g. Brei, Böhm, 2013). An alternative viewpoint, as articulated by Adomako and Tran (2022), regards CSR as a strategic foundation that intertwines an organization's financial performance with its stakeholder management. These perspectives align with targeted views of CSR communication within various domains, such as public relations, marketing, public affairs, and management (Coombs, Holladay, 2011). Allen and Craig (2016) provide another lens, focusing on how organizations and their stakeholders utilize CSR communication to foster responsiveness on ethical issues, corporate philanthropy, and corporate citizenship. This paper predominantly adopts the latter approach, centered on responsiveness and ethical considerations.

As noted by Aslaksen et al. (2021), businesses are increasingly involved in corporate philanthropy and social initiatives during the early 2020s. There is also a rising scholarly interest in analyzing the terminology used in this context, and this trend is expected to continue in the future. As exemplified by Taylor (2023) the history of responsible business indicates a significant precedent for businesses making social contributions beyond mere profit generation. The evolution of a sense of social obligation among businesses has evidently progressed over time. In the context of this article, we suggest adopting a straightforward definition put forth by Dutot et al. (2016). According to this definition, a company should incorporate distinct considerations, such as environmental, social, human, or labor-related issues, into its overall strategy and policies. Crucially, this integration should be the result of a voluntary commitment that surpasses the legal or economic responsibilities of a company in terms of Corporate Social Responsibility. Singh et al. (2016) highlight that effectively implementing the concept of CSR can lead to substantial competitive benefits. These advantages encompass improved access to capital and markets, increased sales and profits, savings in operational costs, heightened productivity and quality, a skilled workforce, added value and reputation, enhanced customer loyalty, and improved decision-making and risk management processes. CSR is viewed as a business responsibility that extends beyond internal stakeholders, such as shareholders and workers, to also include external stakeholders like society and nature.

In the exploration of Corporate Social Responsibility, the concept of trust takes center stage, representing the confidence stakeholders repose in a company based on its principled actions. This trust is firmly grounded in the anticipation that the company will adhere to ethical standards, prioritizing the interests of all stakeholders in its decisions and endeavors (Lins et al., 2016). This perspective aligns with the European Commission's definition, characterizing trust in CSR as the reliance stakeholders place on a company, shaped by its CSR initiatives and underscored by responsible decision-making (Popescu, 2019).

The current landscape is marked by a prevailing belief that consumers lean towards trusting and having confidence in corporations actively demonstrating social responsibility. Beyond harboring positive sentiments about forging enduring connections with such businesses, consumers exhibit a heightened willingness to engage with them (Caputo et al., 2023). Highlighted by Jarvis et al. (2017), the role of Corporate Social Responsibility in shaping customer engagement (CE) is substantial. CE is recognized as a strategic imperative for nurturing customer value and understanding contemporary marketing, as underscored by research such as that conducted by Lim et al. (2022). Lee et al. (2019) assert that CSR has evolved into an innovative marketing strategy for businesses striving to cultivate lasting relationships with customers, deliver added value, and gain a competitive edge.

According to Swaen et al. (2021), the strategic benefits of Corporate Social Responsibility on performance have already been firmly established. Further research suggests that active involvement in CSR initiatives, including environmental programs, ethical products, or social actions, leads to more favorable evaluations of a company (Park et al., 2017). This underscores a positive correlation between CSR policies and customer loyalty through various mechanisms (Iglesias et al., 2020). Recent studies also confirm that supporting a CSR activity positively influences intangible resources like trust, thereby augmenting purchase intentions and loyalty (Swaen et al., 2021). Trust, identified as a key player, assumes a pivotal role in championing values of transparency and social responsibility (Iglesias et al., 2020). The need for transparency in disclosing the environmental impact of corporate activities is acknowledged by Antunes, Santos and Hurtado (2015). This transparency is seen as vital, with communication strategies requiring dynamism across various channels to raise awareness among stakeholders and the broader society. The emergence of Web 2.0 introduces novel social media tools, enabling stakeholders to engage in different forms of interaction and information sharing on the Internet. Corporate websites or blogs, wiki and petition platforms, and notably social networks such as Twitter and Facebook are reshaping the dynamics of interactions and communications between companies and their stakeholders (Fieseler, Fleck, Meckel, 2010).

3. Research Method

Similarly, as in the case of Pope and Wæraas (2016), the literature review can be interpreted as a compilation of discussion points and a checklist for scholars investigating the potential occurrence of CSR-washing in a specific organizational context. Their interpretation focused on cases that can increase corporate profitability through increased consumer purchases, perceiving them as the "most well-developed". Meanwhile, this article examines the significance and relevance of the subject in both public discourse and academic discussions on Corporate Social Responsibility (CSR), leading to the conclusion that it is crucial to delve into various forms of CSR-washing, accompanied by notable examples, in order to thoroughly explore this phenomenon. The research was initiated by querying scholarly databases such as WoS and Scopus using terms such as "CSR-washing", "greenwashing", "social washing", "rainbow washing", "pink washing", and "diversity washing”, in October 2023. As highlighted by Seele and Gatti (2017), various and occasionally conflicting definitions have been proposed thus far. Further research is necessary to classify the diverse forms of greenwashing discussed in the literature, along with exploring its implications and consequences for both business and society. Concurring with Bernardino's (2021) observation that the increasing prevalence of Corporate Social Responsibility reporting has raised questions about its genuine utility, particularly given that CSR reports often resemble marketing materials rather than objective financial statements. In light of this, the content of CSR reports and their occurrences related to distinct types were scrutinized as the primary objective. Given that new social and governance issues are introduced by digitalization, particularly for corporations (Lobschat et al., 2021), the selection of examples that effectively illustrate these complexities in the online sphere was deemed the most challenging and critical aspect. Greenwashing examples were selected based on the assessment conducted by the Corporate Climate Responsibility Monitor 2023, encompassing major multinational companies. Specifically, those with low integrity and very low integrity ratings were chosen for analysis. Other types of washing examples were identified through online desk research, focusing on selected cases that were commented on.

4. Unethical CSR Practices - Varieties of "Washing"

The extensive media coverage of scandals in CSR area has heightened consumer awareness of sustainability concerns, resulting in elevated expectations for retailers to fulfill their social responsibility obligations (Diallo et al., 2023). As posited by Vredenburg et al. (2020), the authenticity of brand activism often hinges on its close congruence with a brand's intrinsic purpose, values and its conscientious corporate practices with a pro-social orientation. Authentic brand activism requires a balance between brand mission, corporate behavior and values aligned with activist marketing messages (Fredrikson, 2021). Research shows that brand activism can impact a company's value, with shareholders responding to alignment or deviation from stakeholder expectations. However, predicting the impact on company value before taking a position remains uncertain, adding to the associated risks (Mirzaei et al., 2022). Undoubtedly, the cultivation of a company's credibility within the public sphere stands as a pivotal imperative in contemporary business landscapes. Nevertheless, in an era where consumers wield unfettered access to comprehensive information, the substantiation of ethical conduct and responsible practices within the supply chain becomes a paramount determinant. Aligned with positivist perspectives on Corporate Social Responsibility implementation (Barnett, Salomon, 2012; Jayachandran et al., 2013; Luo, Bhattacharya, 2006), there are instances that cast doubt on the commendable foundations justifying corporations' efforts to assist their designated beneficiary groups. The persistent prevalence of malfeasance across diverse strata has created a climate where distinguishing between various manifestations of “washing” becomes challenging. The recognition of the necessity to define concepts for clarity and understanding is acknowledged, with the prevalence of concepts bearing diverse interpretations being acknowledged. Accordingly, examples are intended to be provided to illuminate these definitions.

4.1. Greenwashing

As environmental pollution intensifies globally, companies are increasingly prioritizing environmental issues, with growing public awareness further emphasizing the importance of environmental considerations (Zhang et al., 2018). The surge in green markets is accompanied by the occurrence of greenwashing (Majláth, 2017), a phenomenon characterized by the convergence of inadequate environmental performance and positive communication regarding environmental efforts (Delmas, Burbano, 2011). Greenwashing involves the deceptive practice of making exaggerated or false statements about the environmental benefits of a product, service, or company. Essentially, it presents a misleading image of greater eco-friendliness than the actual practices warrant. This phenomenon is alternatively termed as green sheen or green fever (Joshi, Bajpai, 2018; Plec, Pettenger, 2012). Although it has gained significant attention in recent decades, comprehensive and systematic research focusing on the evolution of this phenomenon, especially regarding its impacts on stakeholders, is still needed (Bernini, La Rosa, 2023). De Freitas Netto et al. (2020) note the existence of diverse definitions of greenwashing from various perspectives. However, the authors introduce two primary classifications: Claim greenwashing and Executional greenwashing. Their systematic literature review reveals that the majority of research to date has predominantly concentrated on claim greenwashing at the product/service level. This form involves the use of textual arguments, whether explicit or implicit, that reference the ecological benefits of a product or service to create a misleading environmental claim. Executional greenwashing does not rely on the explicit claims described earlier; instead, it incorporates nature-evoking elements such as images with colors (e.g., green, blue) or sounds (e.g., sea, birds). These nature-evoking elements, whether intentional or not, have the potential to create false perceptions of the brand's environmental friendliness. As per Hartmann and Apaolaza-Ibáñez (2009), these elements can "subtly trigger ecological inferences by activating implicit references to nature through nature imagery". Given its multidisciplinary nature, a universally accepted general definition of greenwashing has yet to emerge. Researchers from diverse fields, including Business, Communication, Economy, Production Engineering, Social Sciences, Environmental Management, and Law, have delved into discussions surrounding this phenomenon. It is noteworthy that the varied manifestations of greenwashing pose a challenge for consumers in identifying the phenomenon. Significantly, greenwashing is intricately connected to the concept of "decoupling". While decoupling involves the juxtaposition of promising policy statements with inadequate program implementation and impact, greenwashing is specifically characterized by the intersection of positive communication about performance, often through reporting, with actual poor performance (Delmas, Burbano, 2011).

4.2. Social washing

While greenwashing pertains to deceptive environmental assertions, social washing involves misleading information regarding the social responsibility associated with a company's products or services. Social washing encompasses a spectrum of ethical actions, or perhaps inactions, extending beyond the stewardship of natural resources to encompass areas such as labor and human rights, gender equality, modern-day slavery, and more (Rizzi, Gusmerotti, Frey, 2020).

A cognate concept rooted in corporate motivations is termed "woke-washing", wherein ethically dubious enterprises leverage social movements to enhance sales without addressing their involvement in contentious practices (Vredenburg et al., 2018). If the term woke washing is unfamiliar, it can be analogously viewed as the counterpart to greenwashing. Woke-washing entails incorporating social justice themes into marketing campaigns to cultivate a favorable corporate image without undertaking substantive actions (Sobande, 2019, p. 18). More precisely, woke washing is defined as "brands with unclear or indeterminate records of social cause practices", highlighting discrepancies between their messaging and actual practices (Vredenburg et al., 2018). These brands still strive to market themselves as being concerned with issues of inequality and social injustice (Sobande, 2019, p. 18).

Certain scholars limit their examination of deceptive corporate practices to environmental concerns, coining the term "blue washing" for issues related to social responsibility. This relatively recent phenomenon poses research challenges due to the absence of standardized terminology and blurred boundaries (Sailer, Wilfing, Straus, 2022). Blue washing specifically involves misleading marketing efforts that exaggerate a company's commitment to socially responsible practices, emphasizing economic and community factors (Berliner, Prakash, 2015). It transpires when companies use the United Nations Sustainable Development Goals to spotlight chosen responsible practices that do not align with the reality of their core operations.

Moreover, in the landscape of CSR-washing, the emergence of “purple washing” has become increasingly notable. This practice involves various companies and politicians leveraging gender equality and feminist discourse as a strategic tool to enhance their public standing (Genghini, 2023). The color purple, historically linked to women, feminism, and feminist principles, is employed symbolically in this context. The term purple washing, akin to the concept of “whitewash”, signifies the appropriation of feminism and fempinist beliefs, with purple representing these ideals and wash connoting the criticized co-opting strategies. Coined to spotlight the exploitation of minority rights, particularly those of women, this term underscores how such practices contribute to sustaining underlying forms of discrimination (Aggarwal, 2021).

4.3. Rainbow washing

Another term borrowed from the concept of greenwashing - rainbow washing - describes the phenomenon where companies or brands use the language and symbols of the LGBTQ+ movement to market their products or services without genuinely supporting the community or its causes (Johns et al., 2022). According to Champlin and Li (2020), this involves companies undertaking various campaigns and brand modifications to attract the LGBTQ+ community, often with minimal or no substantial investment in the community itself. Johns et al. (2022) characterize it as a novel marketing technique, where companies implement various initiatives to appeal to the LGBTQ+ community without making authentic investments in the community itself. As exemplified by Paefgen-Laß (2021) the rainbow trend dominates as companies, institutions, and celebrities express solidarity with the LGBTQIA+ community in June, during Pride month. Fashion brands like Levi's, Happy Socks, and H+M launch Pride collections, with proceeds supporting non-profit organizations. Lego introduces gender-neutral plastic figures in rainbow sets, and German car manufacturers display rainbow-colored perimeter advertising in stadiums to signal opposition to homophobia, racism, and intolerance. In essence, companies are actively aligning themselves with the vision of a diverse and prejudice-free society. Demonstrating these distinct colors signifies a comprehensive political standpoint (Niculescu, 2022), indicating ongoing support throughout the entire year. More broadly, the concept of rainbow-washing doesn't solely indicate a lack of awareness on the part of companies regarding LGBTQ+ issues. Upon closer examination, it seems to function, in part, as a well-established marketing strategy, with certain negative aspects being overlooked. Some companies are cognizant of this double standard, while others may not be (potentially) (Rusch, 2023).

In addition to rainbow washing, another prevalent term is "pink washing". While some sources consider both terms as synonyms, it's essential to highlight the need for differentiation. Both concepts involve companies attempting to court the queer community and boost revenues or profits through superficial and shallow advertising campaigns. Many of these companies engage in such practices while discreetly funding causes or politicians who oppose LGBTQ rights. Corporate giving practices have become less secretive in recent years, and their visibility swiftly becomes fuel for activists and special interest groups to raise consumer awareness about how these companies truly behave (Wolny, 2023). Puar (2013) defines pink washing as the act of diverting attention from a nation's discriminatory policies toward certain populations by loudly promoting its gay rights for a select few. This practice reinforces a discourse of sexual exceptionalism. Western nation-states actively engaging in global LGBTQ human rights activism enhance their representational capital, portraying themselves as culturally superior, through the strategy of pink washing within the nation. However, a different perspective includes pink washing as the practice of using the color pink and pink ribbons to indicate a company's support for the search for a breast cancer cure and to invoke breast cancer solidarity (Lubitow, Davis, 2011). Pink washing frequently appears during Pride celebrations, which have transitioned from protests against police brutality to emphasizing corporate and police engagement. These entities are criticized for leveraging their participation as a strategy to enhance their image through pink washing. This transformation aligns with the preferences of "respectable queers", embodying the homonormative ideal (Russell, 2018), and introduces another related term — “queerbaiting”.

4.4. Diversity washing

In the realm of social analysis, scholars have progressively substantiated the phenomenon known as diversity washing. Diversity washing is closely related to, but not the same as, other terms like inclusivity washing and rainbow washing. While diversity washing broadly refers to exploiting the idea of cultural, disability, and racial diversity for marketing purposes, inclusivity washing leans more towards pretending to embrace a broader range of social issues, including gender and other forms of marginalization (Aujla, 2023). This term encapsulates significant incongruities between companies' outward declarations of commitment to diversity, equity, and inclusion (DEI) and the actual implementation of these principles in their hiring practices. Companies identified as diversity washers prioritize rhetoric on DEI over achieving authentic gender and racial diversity among their workforce. Intriguingly, despite their tendency to face discrimination violations and negative human capital events, these firms paradoxically receive higher ratings from environmental, social, and governance (ESG) rating organizations. Additionally, they attract increased investments from institutional investors with a focus on ESG criteria (Baker et al., 2023).

5. Results

Table 1 provides a comprehensive overview of selected examples, presenting both the criticisms and the original declarations or marketing messages associated with each case. This table serves as a valuable resource for analyzing the nuanced dynamics between corporate claims and the corresponding scrutiny, offering insights into the alignment - or lack thereof - between publicized commitments and actual practices.

Table 1.
CSR Washing Types and Examples

Company	Criticism	Declarations	Source
	Greenwashing (based on New Climate CSR Monitor 2023)		
Amazon	Emission disclosure lacks transparency, only market-based emissions are reported and major emission sources in s3 are missing.	"We aim to reach net-zero carbon emissions by 2040 by investing in renewable energy, scaling solutions across our operations, and collaborating with partners to broaden our impact"	https://sustainability.aboutamazon.com/2022-sustainability-report.pdf
Carrefour	Carbon neutral by 2040 target entails a commitment to eliminate less than 1% of the company's emission footprint. The continued inconsistent disclosure of GHG emissions does not facilitate a good understanding of the company's emissions.	"CO2 emissions: 50% reduction in GHG emissions (Scopes 1 and 2) by 2030, and 70% reduction by 2040, compared with 2019"	www.carrefour.com/en/csr/performance
Samsung Electronics	Set a 2050 net-zero carbon emissions target, but pledged only a 20% reduction from its 2019 emissions, without sharing a full emissions footprint estimate publicly.	"With this new strategy, we plan to achieve net zero for the DX Division by 2030 and company-wide, including the DS Division, by 2050"	https://news.samsung.com/global/samsung-electronics-announces-new-environmental-strategy
Social washing			
Nestlé	Nestle has been accused of using child labor, unethical production methods, and misleading marketing strategies too many times.	"People and respect for human rights are at the core of Nestlé's culture and values"	www.theguardian.com/global-development/2021/feb/12/mars-nestle www.nestle.com/sustainability/human-rights
Primark	The fast-fashion retailer can offer very low prices because it employs workers from the poorest countries of the world, such as India and Cambodia, and under terrible working conditions.	"Without them we wouldn't be where we are today, and we take our responsibilities to them very seriously"	https://corporate.primark.com/en-gb/a/primark-cares/people.
L'Oreal	It has been criticized for failing to disclose how it mitigates risks in its operations to ensure its supply chains are free of child labor and modern slavery.	"We help solve the problems the world faces by supporting important social and environmental needs"	www.reuters.com/article/global-slavery-loreal- www.loreal.com/plpl/poland/pages/commitments/l-oreal-for-the-future-pl/

Cont. table 1.

Rainbow washing			
La Mania	Introduced basics with a Love is Love print, but profits don't support LGBTQ+ causes; they go to the TVN foundation instead. Positive, but misses aiding the represented community or likely buyers.	“T-shirt supporting the LGBTQ+ community from the La Mania brand”	https://fashionpost.pl/rainbow-washing-a-uczciwe-kampanie-pride
Yes	Anyone purchasing an engagement ring worth at least 1000 PLN has the chance to receive complimentary wedding bands from YES once same-sex partnerships are legalized in Poland - limited to the first 10 pairs and expires by 2027.	“We wholeheartedly support equality, justice, respect and openness”	www.wirtualnemedia.pl/artykul/krytyka-yes-yesforlove-rainbow-washing-lgbt-wykorzystywanie #YESforLove
Toyota	Criticized for donating over $600,000 to politicians actively opposing LGBTQ+ rights, their political affiliations contradict the professed values of supporting the LGBTQ+ community.	“Elevating the voice of LGBTQi+ employees is key to Toyota’s vision of building a diverse organization that echoes inclusive society”	www.peacefuldumpling.com/rainbow-washing www.toyota-europe.com/news/2023/pride-2023
Diversity washing			
Google	The company faced criticism for discrepancies between its external stances on diversity, equity, and inclusion and its hiring practices (Baker et al., 2023).	“Strengthening our culture of respect for all”	https://about.google/belonging/diversity-annual-report/2023
Tesla	There are many sexual harassment lawsuits pending against Tesla. Furthermore they received a $137 million judgment for racial discrimination.	“We do the work required to ensure that our culture is as diverse and inclusive as it is collaborative and driven”	https://digitalassets.tesla.com/tesla-contents/image/upload/2020-DEI-impact-report www.npr.org/2021/10/05/1043336212/tesla-racial-discrimination-lawsuit
Qualcomm	Qualcomm was sued for hindering the promotion of Black employees to higher positions despite emphasizing diversity within the company.	“Qualcomm aims to build an inclusive environment where everyone feels like they’re part of the team”	www.qualcomm.com/company/corporate-responsibility/ www.sandiegouniontribune.com

Table 2 distills valuable insights from the aforementioned examples, proposing a set of best practices to effectively address and mitigate various forms of corporate washing. These guidelines serve as a proactive framework for organizations seeking to navigate and avoid potential CSR pitfalls.

Table 2.
Key Advisory Insights for CSR Implementation

Washing Type	Best Practices
Greenwashing	- Corporate climate targets: Provide immediate action signals for emissions reduction and long-term visions for deep decarbonization. - Explanations: Include reasons for omitting certain emission sources from tracking. - Targets Coverage: Explicitly cover short-, medium-, and long-term targets across all emission sources and greenhouse gases.
Social Washing	- Data Disclosure: Advocate for greater data disclosure to uncover and assess the management of social risks. - Evolving Field: Recognize that measuring social risk is an evolving field compared to environmental risk.
Rainbow Washing	- Language Sensitivity: Increase awareness of language sensitivity in corporate communication. - Genuine Commitment: Assess whether companies genuinely understand and prioritize supporting LGBT+ rights or if involvement is a marketing strategy. - Advocacy: Vocal advocacy for LGBT+ rights, opposition to anti-LGBT+ views, and efforts to reduce hate and bias. - Inclusive Practices: Ensure year-round hiring, support, and representation of LGBT+ employees, implementing inclusive policies and processes. - Customer and Employee Opportunities: Create opportunities for expressing identities within products, platforms, and services. - Intersectionality: Spotlight intersectional identities to raise awareness for the most marginalized individuals. - Investments: Make year-round investments in frontline LGBT+ groups through donations, partnerships, or participatory campaigns.
Diversity Washing	- Ongoing Efforts: Recognize that diversity is an ongoing effort requiring continual learning. - Problem Understanding: Understand specific problems within organizations and cultures to create personalized deconstruction strategies. - Representation: Ensure representation of minority groups in all departments and leadership levels for genuine diversity and meaningful change.

Source: own elaboration.

6. Discussion

Through an analysis of existing literature on different types of CSR washing, this paper offers guidance for scholars and practitioners in the field, aiding in a more profound understanding of the central implications and characteristics of these various phenomena. The importance of customer education is deemed significant. Consequently, an endeavor is being made to apply some fundamental guidance. When considering whether a claim is indicative of "greenwashing" in future instances, the following questions may be posed: Is transparency observed? Are goals articulated in a direct and quantifiable manner? Is there a demonstrated understanding of their role in addressing climate change, and is there a willingness expressed to prioritize the planet over profits?

Each individual has a role to play in environmental protection. One of the most effective means of rejecting greenwashing and conveying a message to companies involved in such practices is for purchases to be made exclusively from companies that are genuinely committed to social and environmental sustainability.

Most contemporary literature offers recommendations for managers to enact practical changes with the goal of fortifying reporting practices and associated controls. Enhanced governance practices in CSR reporting should address several crucial considerations. Firstly, materiality assessments presented in CSR reports should utilize fair and accurate descriptors, avoiding the use of mathematical language unless supported by underlying data. Visual aids, such as materiality matrices, should steer clear of any deceptive portrayal of mathematical scale, scatterplots, or weights. Secondly, when adhering to recommendations from standard-setting organizations, companies should openly communicate their decision not to respond to a specific prompt, offering a clear explanation for why the requested information is considered not applicable or reportable. This transparency should prevent the concealment of a non-answer through hyperlinks or other deceptive means. Thirdly, statements regarding third-party assurance should be carefully articulated and positioned to avoid exaggerating the audit scope. Assurance certificates and auditor letters should be strategically placed within or linked to the relevant section of the report reflecting their scope, rather than being relegated to the end of the report, which might unintentionally imply a broader applicability (Famularo, 2023).

7. Conclusion

Under the broader umbrella of CSR communication, a term encompassing the production, consumption, and exchange of information, several categories like CSR, nonfinancial, ESG, and sustainability information have emerged (O'Connor, 2022). This multifaceted landscape underscores the evolving nature of CSR and its diverse manifestations in contemporary organizational discourse. Regulators and lawmakers in the United States and Europe have recently intensified their scrutiny on materiality and greenwashing. In Europe, the Corporate Sustainability Reporting Directive, implemented in January 2023, mandates large and listed companies, including European subsidiaries of foreign entities, to regularly disclose information about social and environmental risks they encounter. This includes details on how their operations impact both people and the environment (Famularo, 2023).

Numerous violations of the CSR concept have led to a loss of confidence on the demand side in the noble intentions of market participants when introducing sustainable business practices. The reluctance and distrust of CSR has led to alternatives that offer a chance to cleanse the reputation of companies trying to act responsibly. One proposal worth mentioning is the creation of shared values, presented by Porter and Kramer (2011). Due to them firms can create shared value by innovating products, optimizing market presence, and reducing costs. Additionally, they can enhance productivity in the value chain, acting as stewards for natural resources. Acknowledging their interdependence, companies benefit from local cluster development through reliable suppliers, efficient infrastructure, skilled talent, and a robust legal framework for sustained competitiveness and socio-economic progress. Furthermore, the described concept offers smaller market participants, who lack adequate financial resources compared to international corporations, a concrete opportunity to actively participate in philanthropic endeavors (Lemańczyk, 2023). Moreover, it is noteworthy that the outlined concept has the potential to catalyze the emergence of local initiatives and thus represents an integral part of the realization of social capital theory (Działek, 2011). Another proposal for CSR is the concept of ESG, whose transparency is guaranteed by individual indicators. The adoption of ESG criteria has fundamentally reshaped 'sustainable investing,' moving beyond regulatory efforts to enhance investment ethics. It has evolved into a speculative valuation approach, capitalizing on current societal issues and the growing influence of capitalism (Leins, 2020). The environmental, social and governance (ESG) framework, defined as the management of environmental, social and governance issues in organizations, serves as a guiding framework for risk management (Bradley, 2021). Based on the contemporary imperative to optimize corporate profits while promoting lasting social and environmental benefits (Domańska-Szaruga, 2011; Giese et al., 2019), key considerations include climate change, carbon emissions, pollution, human rights, labor standards, health and safety, diversity policies, and corporate governance (Inderst, Stewart, 2018).

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SILESIAN UNIVERSITY OF TECHNOLOGYPUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIESNO. 192

IMPLEMENTATION OF AN INTEGRATING ROBOT PLATFORM AS AN OPPORTUNITY TO ACHIEVE BETTER DIGITAL MATURITY OF POLISH ENTERPRISES

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Purpose: The aim of the article is to evaluate an innovative product - the implementation of a platform that integrates and at the same time increases the digital maturity of enterprises. Relationships with system integrators are important for maintaining and increasing manufacturers' competitive advantage.
Methodology. The research method includes a review of previous analyzes and assessments of digitization according to various studies, and a case study analysis - implementation of the DBR77 integration platform. Such a case study will allow for the introduction of digital solutions, which in turn will affect the level of digital maturity of both the supplier and the recipient.The example of a case study brings a lot to solving the problems of practice of companies interested in digitization, as well as an example for students.
The following research questions can be posed here:
RQ1. What is the role of digitalization in modern enterprises in the light of current research results in Poland?
RQ2. What are the methods used to evaluate digitalization and innovation for industry?
RQ3. Does implementing an integration platform help achieve better digital maturity?
Findings: The Digi and Desi digital maturity methods presented in the article can be used to assess the level of digitization of an enterprise, and the case study can be a model for companies to use the robotics platform.
Research limitations/implications: The research was limited by access to data due to its nature - it was sensitive data. Specific benefits could not be quantified because the company did not agree to this due to the sensitivity of the data. In addition, limitations arising from the requirements of the volume of the work do not allow for a broader analysis of platform systems.
Practical implications: The study conducted can be useful fora good example for students and a model that researchers can set for didactic purposes to deepen their knowledge, as well as for enterprises interested in the digitization of modern organizations.
Social implications: The integration platform is an excellent example of implementing innovative models and technologies for industrial companies as well as a model for operating in the cloud. It is an example both for enterprises operating in the cloud and for industrial startups - integrator companies.
Originality/value: This case study is also a good example for students and a model that researchers can set for didactic purposes to deepen their knowledge, as well as for enterprises interested in the digitization of modern organizations. It may also be the beginning of further

research in this area. So it is a contribution to the development of science. It may be worthwhile to include in further research a set of case studies covering all the major solutions that are being implemented in the factory of the future.
Keywords: marketing, society 5.0, digitalization, robotization, integration platform.
Category of the paper: Research article and case study.

1. Introduction

According to E. Worotyńska-Kos (2021) the new social model 5.0 (Society 5.0) is called super-intelligent and is data-driven (Data - Driven Society). The most important resource of the 21st century is data. Countries are supposed to provide tools that enable the smooth and secure flow of data between companies, citizens and public administration. A certain stage of social evolution is beginning before our eyes. Society 5.0 is expected to connect people, machines and systems into a single cyber-spatial platform that exceeds human capabilities.

A super-intelligent society is very adept at adapting to technological changes and is aware of 22 their impact on society, so it tries to carry out activities aimed at promoting talent, diversity and 23 empowerment (Huang, 2022). Nakanishi and Kitano (2018) distinguished 5 key characteristics of society 5.0. These are: the ability to solve problems and create value; Diversity. Society 5.0 values the diverse skills, ideas and needs of others, transforming them into business, Decentralization; Resilience; Sustainable development and harmony with nature.

2. Notions and concept of digitalization and the difference between automation and robotization

As stated by K. Śledziewska, R. Włoch (2020), in the Polish literature the term digitization is often used in the sense of transforming an analogue format into a digital one. The notion of digitization is used to denote the phenomena referred to as digitization: it is mentioned about the digitization of processes, the digitization of education, and the digitization of companies.

Another important concept is transformation. According to Bloomberg, "we digitize information, digitalize processes and roles falling within the scope of business operations, and we digitally transform the company and its strategy". The problem is that these concepts are close in meaning Bloomberg (2018). K. Śledziewska and R. Włoch further present the following definitions:

- digitization: converting an analog data format to a digital one;
- digitalization: the application of digital technologies to specific economic, social and political processes;

- datafication: obtaining data by creating digital representations of the real world as a result of digitization; integration (processing and joining of data sets) and data analysis with the use of algorithms; deriving economic, social or political value from the information thus obtained; technologies for collecting, integrating and analyzing data are referred to as datafication technology;
- digital transformation: in a narrow sense - a comprehensive change in the functioning of the organization taking place as a result of the implementation of digital technologies; in a broader sense - a structural change in the functioning model of the market, consumers, enterprises and other organizations (including the state), employees and the global economy, resulting from datafication.

These definitions are also presented in foreign publications, among others, in Reis, J. (2018), Collins Dictionary, (2021); Hausberg, J.P. (2019); Digitization vs. digitalization: Differences, definitions and ... https://www.truqcapp.com › digitization. The concepts closely related to the aforementioned by K. Śledziewska and R. Włoch are **automation and robotization**. The paper presents selected problems because they are strictly related the analyzed case study – DBR 77. Automation is the use of machines for work that cannot be done in any other way. Automation is the next stage after mechanization, where direct human labor is necessary to produce the final product (Gupta, 2007, p. 1). Thanks to automation, the efficiency, speed and accuracy of production are increased. In addition, by implementing **automation** of production lines, a synergy of human and machine activities is achieved, which has a positive effect on the increase in efficiency. Repetitive, monotonous activities are carried out by industrial robots much faster. On the other hand, robotization is replacing human work with robots. In industry, it most often takes place at positions where repetitive, routine activities are performed, also in hazardous and burdensome conditions for humans. On the other hand, in the service environment, robots are IT applications used to automate business processes (the so-called *Robotic Process Automation*) (Grycuk, 2017, pp. 145-146).

Automation exists without robotization, while robotization without automation does not. Robots, after prior programming, perform a given activity autonomously. Robotization is therefore a narrower concept. On the other hand, depending on the specificity of the operation of a given enterprise, the production process can be automated so that there is no need to install a robot. The installation of individualized machines that perform their tasks automatically and autonomously, and do not fit into the definition of a robot, can also be successfully implemented in the spirit of Industry 4.0. Figure 1 shows that the aforementioned concepts are closely related to industry 4.0 and a smart factory, and this article focuses mainly on digitization, automation and robotization.

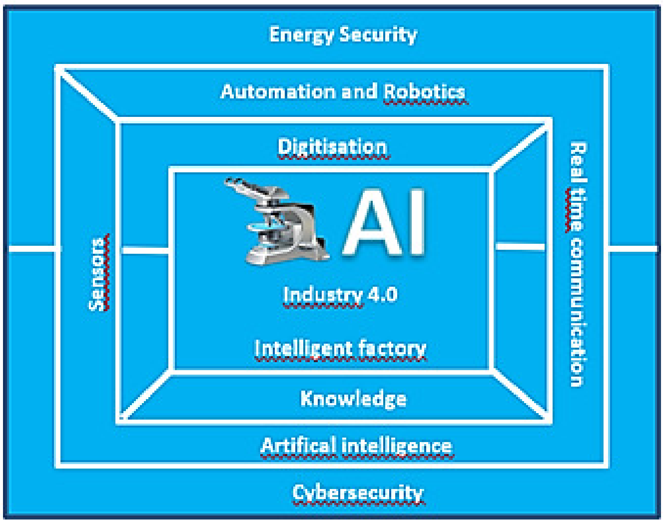

Figure 1. Features of Industry 4.0.

Source: based on Raport Szanse i wyzwania polskiego przemysłu 4.0 - agencja rozwoju przemysłu. https://arp.pl/documents/42/Raport_ARP_2018_Przemysl_4_0.pdf

A. Jabłoński writes more about the essence and concept of automation in the article entitled *Barriers and the scope of automation from the perspective of the content of work* (2021). It presents a historical perspective, but emphasizes that automation can be partial or full, when an automatic and flexible course of the production process is ensured without human intervention (Musso, 2013, p. 301). Therefore, the author believes that robotization means full automation, i.e. automated execution of specific tasks and processes (Jabłoński, 2021/3).

3. Need for digitalization – overview of conducted studies and reports

Digitization and the introduction of new technologies are not a goal in themselves, they are tools to change business models into those that allow you to remain competitive in the market. In the case of manufacturing companies, digitization enables the emergence of "intelligent" production management systems based on online communication between the elements of the production process and advanced data analysis (Marchewka, 2018). The main area of the authors' research interests has also become the automation of business processes and the impact of automation and robotization - on the development of the company. The study by researchers Almeida, F., Santos, J.D., Monteneiro, J.A. (2020) is very interesting because their team study analyzed the impact of digital transformation on processes in three areas. This team-based exploratory study analyzed the impact of digital transformation on processes in three business areas: employee and social relations, marketing, and sales and technology. The authors state that the effects of digitization are felt in all these areas. These considerations, as underlined, require empirical research in different business sectors and in specific countries. In the next team article, Rachinger, M., Rauter, R., Muller, C.H., Vorraber, W., Schirgi (2018), the authors present empirical insights collected in interviews with 12 representatives of two media and automotive industries in Austria and Hungary. This preliminary study clearly shows that the company's value creation itself, as well as its position in the network, determine the innovation of business models (BMI) through digitization. On the other hand, organizational skills and employee competencies were identified as future challenges that both industries will face.

On the other hand, a very interesting team article presents the concepts of one-time research as well as their implementation and results Brodny, J., Tutak, M. (2021) according to 16 indicators that characterize the most important areas of the digitization and robotization process. The main objectives were to determine the ranking of EU countries in terms of the level of digitization and robotization, taking into account the size of enterprises, and to determine groups of these countries that are similar in this respect, well presented in clusters. The authors confirm that in terms of assessing the level of digitization and robotization, the best and weakest groups of countries largely coincide with the results of The Digital Economy and Society Index (DESI). These are important, but one-time studies, they are not carried out cyclically, as the main reports presented below, which discuss both the DIGI and DESI methods and indicators determining the level of digitization.

An overview of the selected studies and reports, due to a number of research units carried out on this level of transformation, automation and robotization of industrial organizations is presented below.

The results of the 2018 survey conducted by ARP (2018) are interesting and are presented below. The Opportunities and Challenges Report of Polish Industry 4.0 presents the integration of the robotics and industrial automation market with the ICT market. Next, the report deals with the development and importance of robotics in the world. Unfortunately, the level of robotization in the Polish industry is much lower than the global level. This is particularly evident in the so-called robotization density index (a number of robots per 10,000 employees). For Poland, in 2016, the International Federation of Robotics IFR defined this indicator at the level of 32 robots per 10,000 industrial workers.

Another study was developed by IDG & ABB: On the way to Economy 4.0. A time of change for business. The study was conducted in 2019 by "Computerworld" in cooperation with IBM Polska, TIDK sp. z o.o. and ABB sp. z o.o. (www.computerworld.pl/news/W-drodze-ku-Gospodarce-4-0-Wyniki-badania-Computerworlda,412715.html, 2019).

A total of 108 respondents whose enterprises operate on the Polish market participated in the survey (48% of entities came from the SME sector, the remaining 52% were large companies and corporations). The research project aimed to collect data on the level of adaptation of digital technologies in enterprises on the threshold of the fourth industrial revolution. Several research questions were posed: How are the activities carried out under Economy 4.0 anchored at the level of the company's strategy? What are the plans for the digitization of manufacturing processes of companies operating on the Polish market? What factors and potential benefits are driving companies to take a bigger step towards digital transformation? As the study shows, the term Industry 4.0 was familiar (recognizable) to more than half of the surveyed companies. Nearly 70% of companies aware of the existence of the Industry 4.0 concept have planned or have already started implementing its elements into their strategies. The survey showed that enterprises have precise business plans and awareness of which areas of their activities require refreshing and optimization. Nevertheless, the report showed a serious problem regarding the awareness of Polish entrepreneurs and their willingness to change. Over a quarter of the respondents (27%) do not plan to undertake any activities in this area. Such conclusions are repeated, in a similar form, in many reports on Economy/ Industry 4.0 in Poland.

We should add very important results of the report conducted by *Business Insider Polska, Digitize or save*?Kerall's Research agency commissioned by Symfonia - a Polish producer of software for business. The study was conducted on the example of Polish small and medium-sized enterprises, where most of them have been operating on the market for over 21 years. After the survey in August 2021, the report entitled *Investments in technologies in the age of a pandemic. New challenges for SMEs: digitize or save?* was prepared. (businessinsider.com.pl/finanse/cyfryzowac-czy-oszczedzac-wyniki-raportu/81ctrpb, 2021) According to the surveyed companies, a visible benefit from digitization is that a company that invests in digitization gains cost savings, which was indicated by 42.2% of the respondents. Its efficiency and effectiveness also increase (43.5). However, according to entrepreneurs, new technologies also mean greater competitiveness (27.05) and access to a wider market (22.2%). For almost one in ten companies, investments in new technologies do not give any advantage, and according to them only digitization (9%) is an additional cost. The study shows that 75% of small and medium-sized enterprises in Poland conduct digitization of business. Such a decision was made by every fourth of them in order to reduce costs, which is in line with the earlier indication that the main advantage of digitized businesses is cost savings in the future. A very interesting question for companies was: what is digitization today? A necessity, a strategy or an opportunity? The prevailing opinions were that this technological change was a compulsory necessity and they stated that - *we do it because we have to* (32.7%). More than 30% consider digitization as an opportunity to enter the market more widely, and 31.2% say that digitization is their development strategy and will give them greater competitiveness and improved revenues. Mainly in small enterprises - in every tenth they say that you do not need to digitize to develop. On the other hand, 15% believe, especially medium-sized companies, that if it had not been for the pandemic, they would not have invested in digitization. In addition, 28.7% of enterprises believe that the current investment in digitization is a condition for staying in business, and 44.2% see digitization as an opportunity for development.

The current study by DBR77*: Forecast of Directions for the Development of Robotization in Poland*, (Wiśniewski, 2022).

It is also worth quoting the results of the report conducted by the DBR77 company, a very up-to-date study, the purpose of which was to make robotization available to all production companies, which significantly influenced the development of enterprises, as well as the level of people's quality of life (Wiśniewski, 2022 – the author's study of the analyzed company).

According to the aforementioned report, DBR77 Poland is in 18th place in the world in terms of the number of installed and operating industrial robots. In 2015-2020, there was an increase in the numbers of robots by 16%, however, the level of robotization density in Poland should still be considered low, i.e. 52 robots per 10,000 employees in the manufacturing industry. The robotization density in the automotive industry in 2020 was 206 robots per 10,000 employees.

The above publications and reports show that companies must constantly invest in the development of digitization and robotization, which will help them not to fall behind the competition. Company digitization is not only necessary, but absolutely imperative. Current generations, living in the environment of technology from an early age, will expect more and more digitization and digitalization.

4. Methods of assessing implementations according to the Siemens method'(DIGI, DESI Index and ADMA Method')

The level of digitization of the Polish industry in 2020 was analyzed by Siemens in the premiere report "**Digi Index 2020. The Level of Digitization of Production in Poland**". It was measured using the proprietary Digital Enterprise Index (Digi Index) (siecotwartychinnowacji.pl/baza-wiedzy/przemysl-4-0-poziom-digitalizacji-polskich-firm-w-2020r). It was created on the basis of an algorithm developed by Siemens and a survey of the Polish market. Digi Index is calculated for the entire industry and for individual industries: food, chemical and pharmaceutical, automotive and machine industry. The index includes six areas of digitalization - strategic planning, organization and administration, system integration, production and operational operation, data management and the application of digital processes. The rating scale ranges from 1 to 4 points. A result below 2 points means an alarmingly low level of digitization, while industry 4.0 leaders score above 3.5 points. The first survey was carried out in March 2020. The CATI technique, i.e. telephone interview, was used. The survey was conducted throughout Poland only among active entities, excluding companies in a state of suspension or liquidation bankruptcy. 100 manufacturing companies employing 50-249 employees were selected (random-layered sample). The Digi Index for Poland for 2021 was 1.8 points on a 4-point scale. These results show a large lag of the Polish industry compared to the development of EU countries and confirm a need for an immediate action. According to the assumptions of the research method, an indicator in the range of 2.1-2.5 proves that the foundations for digitization are created in the company. In all analyzed industries, the area of data management achieved the highest values (from 2.6 to 3.1 points). The lowest scores in each sector were achieved by areas such as systems integration as well as organization and administration. Every third respondent declares the degree of digitization in the company at the level of 20-39%. Only 6% of companies assess this indicator at a level exceeding 80%. For many years, the automotive industry has been relatively best in the research, where the total digitization level is 56.7%.

The Digi Index for Polish industry was 1.9 points in 2020. According to the scale adopted by Siemens, this is an alarming result. It indicates an urgent need to introduce changes in the area of digitization of enterprises in Poland (Digi Index 2020). Polish producers did best in the areas of production and operational activities (2.6 points) and data management (2.9 points). The worst result was observed in the case of systems integration (1.1 points) and strategic planning (1.4 points). This means that Polish companies most often focus on the standardization of production and operational activities as well as the digitalization of production data. Businesses do not have a digitalization implementation strategy and systems are not sufficiently integrated. In the Siemens study, as much as 43 percent of the surveyed companies indicated the lack of financial support as the main barrier to digitalization. Developing plans and strategies is a problem for 20 percent of companies. It turns out that 14 percent of entities do not know how to use the collected data. The digital transformation of the company increases its competitiveness and is a significant advantage on the international market. It is also worth learning how Polish producers compare in terms of digitization to the European background.

Another indicator determining the country's potential in terms of the development of industry 4.0 is DESI (Digital Economy and Society). It is an index developed by the European Commission that summarizes approx. 37 indicators on a scale from 0 to 100, grouped into five areas: connectivity, human capital, internet services, integration of digital technology and digital public services. Thanks to it, the level of digitization of the European Union countries is monitored.

According to DESI, in 2020 Poland was in the 23rd place with a score of 44.92 points, which is below the European average of 52.57 points. For comparison, in 2019 the DESI index for Poland amounted to 40.71 points with the EU average at 49.4 points. Despite the observed increase in this indicator, Poland is still far from the European leaders. Each manufacturing company can self-assess its digital maturity. This self-analysis tool was commissioned by the Future Industry Platform, taking into account the key industry 4.0 aspects of enterprise development. After answering a series of questions, entrepreneurs receive information about the stage of digitization of their companies. **The Future Industry Foundation in Poland has introduced the ADMA digital maturity scan also in relation to the Polish market.** Entrepreneurs are networked through the platform of the Future Industry Foundation. The Foundation introduces good entrepreneurship practices, knowledge sharing, and cooperates with 13 clusters. It also introduced ADMA's digital maturity in relation to the Polish market and is characterized and recommended by the Poznań Science and Technology Park (ppnt.poznan.pl/oferta/doradztwo-w-procesie-transformacji-cyfrowej/2021). The ADMA (Advanced Manufacturing) method includes:

- analysis of the digital maturity of an enterprise based on the ADMA Scan method;
- analysis of possible sources of financing for the transformation process (regional and national programs and funds coming directly from the European Commission);
- formulation of change scenarios/ roadmap towards Industry 4.0;
- preparing the team to carry out digital transformation in an enterprise.

ADMA Scan is a tool developed at the request of EASME - a unit of the European Commission dealing with supporting small and medium-sized enterprises. The European Commission has initiated the creation of the European Advanced Manufacturing Support Center (2018-2021) to help SMEs assess digital maturity. The method was created on the basis of many years of experience of experts from many European countries. Within three years of its inception, it was carried out for several hundred companies all over Europe. This tool allows for methodological diagnosis of the company's functioning in many aspects, such as production technology, the level of automation and robotization of processes, digitization of products and processes - production and non-production (sales, warehouse, distribution, marketing, HR, etc.), data integration in the company, cybersecurity, digital strategy, leadership, organizational culture, employee competency management.

5. Research method - case study analysis of the DBR77 Robot Platform

A wide spectrum of research reports was presented relating to many types of evaluation of the degree of digitalization, automation and robotization, which became the basis for the case study of the DBR77 Robot Platform company. This method of case study description is exploratory here and is the first step in the study of the nature of system integrators. The case study method can be used to reconstruct the course of a phenomenon in order to present the factors that shape it - we are then talking about a narrow view. This article takes this narrow view.

Identifying and learning about such factors and tools enabling the implementation of robotics platform technologies according to the empirical study carried out by the CEO of DBR77, P. Wiśniewski, gives an example of the use of integrating platforms and very quick effects in the company's development. Relationships with system integrators are the key to the competitive advantage of manufacturers and will also be a guide for companies operating both in a given country and globally.

Mission and vision of the DBR77 company. The Platform's **vision** is to become the first global market for industrial robots and the choice of anyone who thinks about robotization or automation of production and logistics. The DBR77 platform is the Amazon of the robot world and changes the robotization market (Report by P. Wiśniewski, DBR77, 2022, dbr77.com/report, 2022). **Mission** means we make the processing and digitization of production plants accessible to everyone. In addition, another element of the mission is to build a community of people interested in automation, robotization and digitization.

DBR77 Robotics Ltd is a technology company whose main spectrum is activity on the B2B e-commerce services market. It is one of the companies of the DB77 Group, beside DB77 Tax & Legal and DB77 Consulting. The result of the company's work is the world's first DBR77.com Robot Platform. The platform is an innovative solution on a global scale - there is no virtual space anywhere else that allows manufacturing companies to design a workplace using 3D tools and select a robot according to their needs. The platform is a combination of two business models - marketplace and SaaS formulas.

The DBR77 Robot Platform is one of the B2B platforms based on an innovative business model. There has been a well-established order on the market for the supply of production robots. A small number of equipment suppliers have mastered the global robot supply market. The robots and selected peripheral devices are delivered to local markets through a network of distributors. The robots are sold to integration companies that finally install them together with the rest of the station's equipment in production plants.

The DBR77.com Robot Platform is an innovative solution on a global scale - there is nowhere else a virtual space that allows manufacturing companies to design a workplace using 3D tools and select a robot according to their needs. It provides wide and universal access to information on robotization. The platform connects production companies that require robotization and automation (Investors) with entities that provide and integrate robotic systems (Integrators). The workstations designed and implemented thanks to the platform can also work in the Robot as a Service (RaaS) model, where instead of selling the application, the robot's work is sold on the customer's line. The platform's vision is to become the first global market for subscription-based, cloud-based industrial robots dedicated to production processes. The digital marketplace allows to personalize products.

Within several months, the DBR77 team managed to establish cooperation with global suppliers and manufacturers of robots, i.e. Fanuc, KUKA, Yaskawa, ABB, UR, Mitsubishi Electric, TFM Robotics. In addition, "The platform gives the opportunity to share the created technological solutions and make them available to all users. Thanks to the availability of these solutions, platform users can design their own solution, based on the analysis of already existing ideas. Thus, cooperation, and not competition, is a distinguishing feature and the key to the platform's success "- added P. Wiśniewski (ISBnews).

The DBR77 Robot Platform is a new business model, the purpose of which is to enable the perfect adjustment of robotic solutions available on the market to precisely described specific customer needs. In order for such a perfect match to be possible, it is necessary to standardize the data relevant to investment decisions. The work process on the DBR77.com Robot Platform is organized in such a way that the final adjustment of the solutions is optimal. An integrator on the DBR77 Platform is anyone who, independently or in cooperation with other entities, is ready to propose the concept of a Technological Solution submitted by the Investor. The role of the Integrator can be both the development of the concept and the acceptance of the position delivery order. Thanks to the work on the DBR77 Robot Platform, the integrating company can focus on the execution of orders related to the construction, implementation and commissioning of robotic stations. All activities related to customer acquisition, analysis of the effectiveness of the robotization concept, submission of the offer and carrying out the required formalities are undertaken by the Robot Platform. The integrator only has to integrate the position.

The platform limits the costs associated with obtaining an order to zero. The information contained in the inquiry, also presented in the 3D studio, is sufficient to prepare the concept of the position and financial analysis of the offer. An integrator receiving an inquiry in the form of the described Technological Challenge may immediately start working on the concept of a technological solution. Thanks to the technology used in Studio 3D, people involved in the development of the concept of the station can easily analyze and build production stations. Thanks to the 3D Integrator studio, it does not submit offers that do not make any sense for investors. When designing the Technological Solution, the application automatically calculates the operational and economic effect of the prepared concept of the position. The entire relationship between the Investor and Integrator on the platform is carried out in accordance with the best business practices. The clarity and simplicity of the process ensures the security and transparency of transactions. The Investor and Integrator are safely guided through the entirety of transactions and implementations, in accordance with the best practices in project management.

The following steps are presented in Fig. 2: the process begins with the registration of the Investor (production plant) that provides a small amount of data describing the way work is organized in the plant. In the next step, the so-called "Technological challenge" is placed on the platform, which describes in the proprietary 3D editor what type of workstation should be robotized. The technological challenge is then made available on the platform to be solved. The data contained therein are sufficient to prepare the concept of a technological solution. On the other hand, the platforms are registered by Integrators (suppliers of complete robotic positions) that have access to reported technological challenges. In the environment of proposing technological solutions, a list of the best ideas for a given Challenge is co-created. Then, these solutions are subject to the bidding process. The platform supports the investment decision-making process by analyzing the operational and financial effectiveness of competing offers in real time. The DBR77 Robot Platform allows you to significantly accelerate the robotization of production plants by reducing market ineffectiveness.

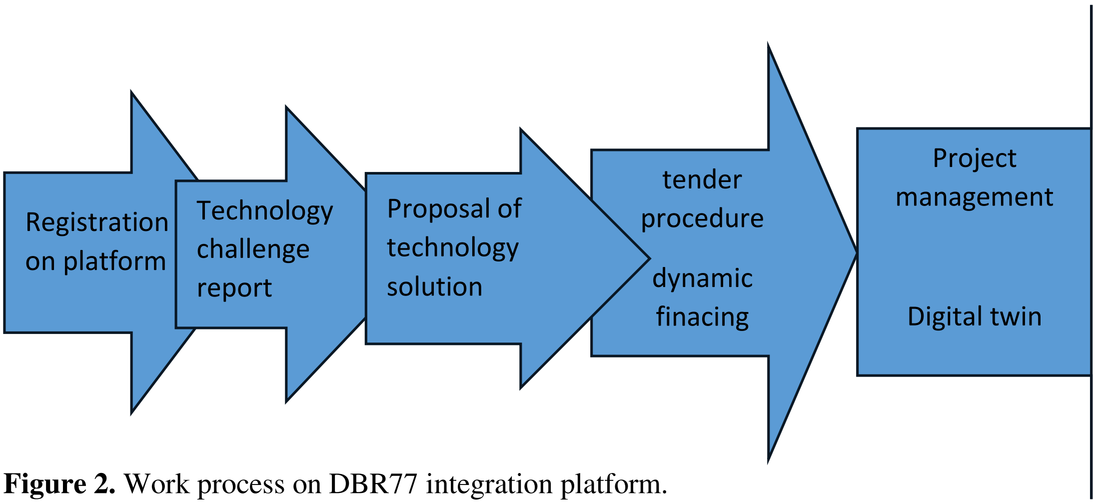

Figure 2. Work process on DBR77 integration platform.

source: Based on materials from DBR77.

The model described carries a unique value offer for both investors and installers. Investors finally have the opportunity to compare both technical and financial conditions, different technological solutions based on different robots. Thanks to the possibility of co-creating solutions on the platform, the design cycle is significantly shortened. At the same time, the available history of already completed projects and their analyzes describing them makes the submitted proposals much more effective from the very beginning than those available in the traditional way. As a result, the process of installing robots becomes cheaper and more efficient, leading to greater availability of robots. Thanks to the platform, integrators can more precisely respond to market demand. By reducing the time and costs spent on sales, companies integrating positions can focus on building positions and developing their own technical competences. Platform companies thrive and grow thanks to the scale effects of collaborative networks. The economies of scale make the platform more valuable as the platform's users create and exchange more value with each other.

The DBR77 Robot Platform reduces entry barriers for both sides of the market. Small and medium-sized production plants no longer need huge financial resources and specialized competences to develop and implement (the platform also provides Robot as a service - RaaS) robots on production lines. Integration companies no longer need to engage sales forces to reach the customer with the best offer. The robot platform has also implemented mechanisms supporting the development of its participants and the scale of the cooperation network. Firstly, trust in integration companies is built through a clear form of evaluation of the technological solutions they submit and the positions they perform. The second phase of project implementation, after selecting the offer, is also carried out on the platform, which means that the project is carried out in accordance with the best practices in project management. Following the process enforced by the project management tools on the platform guarantees successful installation. The third tool to support the development of the platform's reach is the implementation, in cooperation with other market participants, of further modules for resolving competences for market participants.

6. Conclusions and practical implications

It can be concluded that the elements of a smart factory, automation and robotization is the basis of the business model and is the basis for determining that robots produce robots. Digitization in modern enterprises is very important, hence **the answer to the first research question** is positive that the role of such automation or robotization is necessary for industry 4.0 because enterprises in Poland are only beginning to notice the benefits of Industry 4.0. Understanding them will allow for the development of automation and robotization to achieve a higher level of digital maturity. The discussed research and studies of reports on the level of digitization - made it possible to evaluate the activities undertaken by Polish enterprises. The reports also indicate the recommended actions that should be started to spread robotization in Poland. A. Sobczak (2018) wrote about it earlier that there is not enough research in the publication: Robotization of business processes- current status and development directions (Sobczak, 2018), but valuable is also a publication of theoretical nature supported by the opinions of practitioners, edited by B. Gregor and D. Kaczorowska-Spychalska (2020). Digital technologies in business. Enterprises 4.0 and artificial intelligence (978-8-3012-1407-4), First Edition, PWN Scientific Publishers, Warsaw [URL]. Moreover, this is confirmed by a review of this publication prepared by Prof. Dr. Jan W. Wiktor and published in Organization Review 11/2021.

Answering the second question, it was the review of the conducted publications and reports that allowed to present the methods of assessing technology implementations according to the Simen's method, along with the DIGI and DESI indicators achieved by Polish industry companies in the following years. They are not satisfactory because Poland has a low level of achieved results (the digital gap is visible in almost all indicators), but this system allows each company to be able to carry out such an assessment of its digital maturity level. Therefore, it is worth keeping a close eye on the digitization of the economy. This is confirmed by the DESI (Digital Economy and Society Index) commissioned by the European Commission, which shows that in almost all areas of digital transformation, Poland differs from other Member States of the European Union. A supporting method is also the previously described ADMA method- Advanced MAnufacturing.

The third research question confirms that it is innovative integration platforms as business model changes that help achieve better digital maturity. It is a great example for the implementation of innovative cloud models and technologies for industrial companies as well as a model for operating in the cloud. It is an example both for enterprises operating in the cloud and for industrial startups - integrator companies. Moreover, it is worth emphasizing that technological change is not a compulsory necessity, but an opportunity to increase efficiency and effectiveness. However, according to entrepreneurs, new technologies also mean greater competition and access to a wider market.

In turn, the benefits that platform implementation brings can be put as: the digital marketplace allows to personalize products. Thanks to the availability of these solutions, platform users can design their own solution, based on the analysis of already existing ideas. Thus, cooperation, and not competition, is a distinguishing feature and the key to the platform's success. The platform limits the costs associated with obtaining an order to zero.

Thanks to the technology used in Studio 3D, people involved in the development of the concept of the station can easily analyze and build production stations. Thanks to the 3D Integrator studio, it does not submit offers that do not make any sense for investors. Thanks to the possibility of co-creating solutions on the platform, the design cycle is significantly shortened. As a result, the process of installing robots becomes cheaper and more efficient, leading to greater availability of robots.

The DBR77 Robot Platform reduces entry barriers for both sides of the market. Small and medium-sized production plants no longer need huge financial resources and specialized competences to develop and implement robots on production lines.

It should be emphasized once again that an important aspect of the research conducted is its contribution to the development of science. It may concern preparing the enterprise for hyperautomation - one of the key technological trends of 2022. Preparing a company for hyper-automation should begin with gathering information about all processes, as well as gaps, delays and the so-called bottlenecks. The work may be facilitated by the preparation of digital twins to facilitate the visualization of activities. Next, one need to determine which data is necessary in orderly processes, define the automation platform and techniques, and check where it is worth enabling AI algorithms (Grendys Industrial Guide, 2022; https://przemyslprzyszlosci.gov.pl/author/aleksandra-grendys/page/20/). Science has not yet fully realized that there is a lack of knowledge and has not dealt with the fast-paced education process in this regard. This also translates into such a low level of digitization of the Polish economy. But the theoretical publication supported by the opinions of practitioners, edited by B. Gregor and D. Kaczorowska-Spychalska, Digital Technologies in Business, is also valuable. Enterprises 4.0 and artificial intelligence (978-8-3012-1407-4), first edition, Polish Scientific Publishers PWN, Warsaw 2020 [URL]. It is also confirmed by the review of that publication by J. Wiktor (2021). The limitations of the volume of work requirements do not allow for a broader analysis of platform systems.

The author is aware of the fact that due to editorial limitations have not been exhausted all the issues that are related to the processes of digitization or digitization of Polish companies.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

HEALTH AND SAFETY MANAGEMENT IN THE ERA OF BUILDING SOCIETY 5.0

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Purpose: The purpose of the article is to make a detailed characterization of the cybernetic system of man-machine-environment in the context of maintaining occupational health and safety.
Design/methodology/approach: Data for the study was collected using participant observation. Subsequently, any information obtained is presented in this paper as a case study.
Findings: The results of the study indicate that occupational health and safety management in the era of building society 5.0 is highly dependent on the proper cooperation of man and machine in a turbulent work environment.
Research limitations/implications: The survey is limited to employees of one manufacturing company. Therefore, it would be extremely valuable to observe whether work safety in other companies also depends primarily on the proper preparation of workers to work with machinery.
Practical implications: The study provides guidance for human resource management to implement effective practices to enhance employee safety in the era of building society 5.0.
Social implications: This study offers support to the employees of a manufacturing company, providing insight into how the work environment can be improved, thereby increasing health and safety.
Originality/value: This is a study that aims to provide insight into how, in the era of building a 5.0 society, it is important to take care to prepare the employee to be a designer of a safe work environment in which people and machines work together to achieve the best work result.
Keywords: health and safety management, ergonomics, society 5.0.
Category of the paper: research paper.

1. Introduction

The era of building society 5.0 is characterized by the presence of strong synergies between humans and machines. The technologies are being designed to be more human and understandable, which facilitates communication between humans and automation systems. In the context of worker health and safety, the human-worker cybernetic system is a very important issue. It refers to the design of jobs and tasks so that they are tailored to the needs, capabilities and limitations of workers. One of the key goals of employee safety management in the era of building a 5.0 society is to create work environments that support employee health, comfort and productivity (Avilla-Gutierrez et al., 2022). By implementing automated solutions that help with both professional work and daily tasks, the quality of life and well-being of society improves. However, it should not be forgotten that digital technologies are changing the way we work and require new skills, such as programming, data analysis and data management. In a 5.0 society, there is a strong emphasis on continuous education and skill development so that people can adapt to the rapidly changing technological environment.

The purpose of the article is to make a detailed characterization of the cybernetic system of man-machine-environment in the context of maintaining occupational health and safety. In the era of the creation of society 5.0, there is nothing more valuable than the creation of effective and efficient health and safety management systems in companies.

2. Health and safety management system

Research conducted by the European Foundation for the Improvement of Working Conditions in seven European Union countries shows that the primary driver of efforts to improve worker health and safety is legislation. They are the ones that provide a framework for workers to enjoy a high level of health and safety in the workplace (Occupational safety and health in Europe, 2023).

These studies also show that actions to improve working conditions work are taken with a view to increasing productivity and improving the quality of work, creating a positive image of the workplace and raising employee motivation. There is also a growing awareness of losses caused by accidents and absenteeism among employees.

Analyzing legal regulations in the field of health and safety, which also in Poland should be considered the main stimulator of efforts to improve occupational safety and health protection of employees, it can be concluded that in every enterprise should function, more or less formalized, a system of managing occupational health and safety. The way in which the occupational safety and health management system is designed, functions, as well as its effectiveness, may vary from one enterprise to another (Goździewska-Nowicka, 2019). This is determined by obvious considerations, such as the size, the nature of the organization's activities, its operating conditions and the categories of employees employed. Very important here is the level of safety culture characteristic of a given enterprise.

The approach of enterprises to occupational health and safety is well presented by M.B. Weinstein. He distinguishes four levels of occupational health and safety management in enterprises (Tabele 1). From activities motivated only by fear of penalties for non-compliance with regulations to a focus on continuous improvement of the state of health and safety and occupational health.

Table 1.
Levels of occupational health and safety management in the enterprise

	Level I	Level II	Level III	Level IV
Motivation to act	Fear	Punishment	Award	Motivation internal
Type of action	Passive	Reactive	Active (understanding and trust)	Proactive (passion and commitment)
Typical evaluation method	Only inspections of supervisory institutions	Documentation analysis, inspections	Observation of workplaces, audits of the system health and safety management	Reviews and interviews, results work
Typical training	Only courses basic	Courses, instruction and checking	Thorough instructing and support	Based on examples, self-improvement
Typical health and safety objectives	Avoidance Penalties and fines	Avoidance of noncompliance	Performing all work correctly	Zero accidents, best methods
Results achieved in the area of health and safety	Incomplete compliance, performance worse than averages	Compliance, lack of improvement, average performance	Correct behavior, performance than average	Continuous improvement, leadership, results excellent

Source: own compilation based on Weinstein, 1997, pp. 34-35.

The approach to occupational health and safety management corresponding to levels I and II is referred to as traditional or reactive, while the approach corresponding to levels III and IV is referred to as systemic and proactive, as it is related with the implementation of a specific management system of resources, activities and processes in the enterprise aimed at continuous improvement of health and safety at work (Legg et al., 2015). The first two levels characterize enterprises in which work and safety issues are treated marginally, as unimportant (but necessary due to applicable regulations) area of activity. The number and quality of activities undertaken here are limited to the extent of avoiding sanctions for failure to meet regulatory requirements, and their main purpose is to reduce expenditures. Levels III and IV signify a change in thinking about safety and health protection of the employed. Taking care of the health and safety of employees is an investment that pays off (both in terms of social and economic). This attitude toward work and safety is characteristic of organizations that treat occupational health and safety on an equal footing with other areas of their business.

Observation of business practice reveals that more and more companies are adopting practices characteristic of Level III and IV. Many organizations are interested in taking systematic measures to improve the state of occupational health and safety. This is accompanied by the belief that the effectiveness of these activities requires that they be carried out within the framework of a structured occupational health and safety management system implemented and maintained in these organizations.

The International Labor Organization defines an occupational safety and health management system of occupational safety and health as a system of interrelated and interacting elements for establishing occupational safety and health policies and objectives and the achievement of these goals (Vaughan-Whitehead et al., 2021). In contrast, PN-ISO 45001:2018-06 defines the system as part of an organization's overall management system, which includes the organizational structure, planning, responsibilities, policies, procedures, processes and resources needed to develop, implement, execute, review and maintain a health and safety policy (Rączowski, 2022).

Companies can build and develop health and safety management systems on their own, and there is nothing to prevent them from being effective and efficient. Of course, their shape will be significantly influenced by regulations in force in this area. However, the way they approach safety and health issues (passive or active), the type of measures taken (only what the law prescribes or also voluntary initiatives), the methods used to achieve the goals set, to solve the problems that have arisen depend on the enterprise.

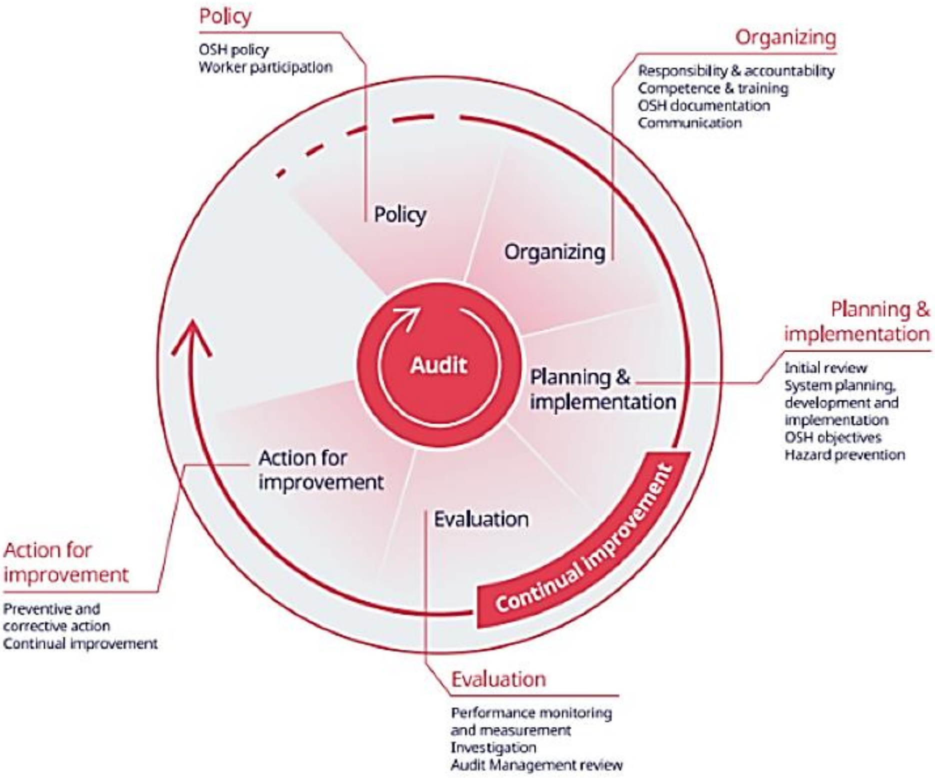

Figure 1. Occupational Safety and Health Management System Cycle.

Source: Vaughan-Whitehead, Ghellab, Munoz de Bustillo Llorente, 2021, p. 124.

The safety and health management system model is based on the concept of continuous improvement. Organizations implementing an occupational health and safety management system in accordance with this model must establish an occupational health and safety policy and objectives, plan activities to achieve them, create appropriate conditions for carrying out these activities, check their effects, take preventive and corrective actions in response to nonconformities revealed, and continuously improve the system, by carrying out periodic reviews to check its suitability and effectiveness in terms of the organization's established safety and health policies and objectives and occupational health and safety (Ghkobakhloo et al., 2022).

The guidelines and requirements set forth in the standards hit different ground. The result is the development of different occupational health and safety management systems work (although built on common foundations defined by the standard). The success of an occupational health and safety management system will be determined by the proper, adapted to the particular organization the way in which these requirements are met. The most important thing is that more and more entities recognize the need for proper management of the health and safety area and continuous improvement in this matter (Tepe, 2021).

3. New era man – society 5.0

The Japanese define society 5.0 as a model of of human-centered relations (human-centric society). It uses economic progress to solve social problems through a system and technology that strongly integrates cyberspace with the physical, real space. It is a society characterized by a higher level of integration, the interpenetration of the two realities - digital with real - facilitating the embedding of cyberspace in the real world. Such a society can also be called a super-intelligent society or creative society. This is another society, after the hunting society, agrarian society, industrial society or finally information society, that we exists today. Figure 2 presents the stages of creating society 5.0.

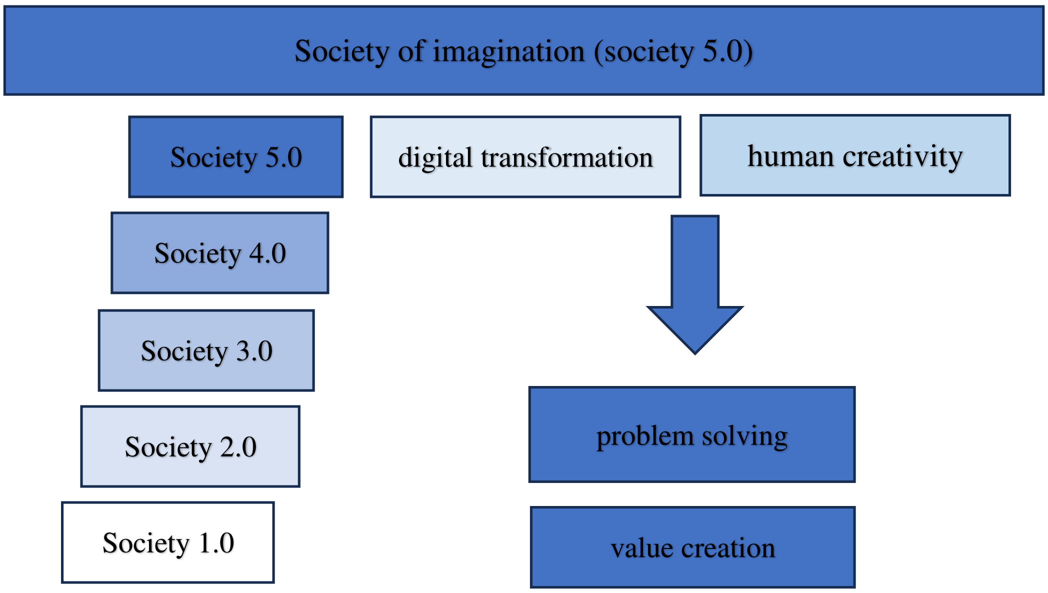

Figure 2. Factors for building society 5.0.
Source: Twaróg, Mieczkowski, 2019, p. 28.

The Japanese government did the analysis and, based on that, developed the Fifth Science and Technology Base Plan, which was adopted in January 2016 (Hayashi, 2019). The plan calls for a transition from Industry 4.0 to a society 5.0, in which all aspects of society, including industrial work, is shaped by the latest techniques and technologies. Japan has had to develop a new model for how society operates, as it is experiencing problems related to energy shortages and energy imports from abroad, limited natural resources and an aging population. One of the main ideas of policymakers is to use artificial intelligence (AI) to solve long-term problems (Ricciolli, 2023).

The basis for the development of Society 5.0, according to the Japanese government, should be: Japan's Revitalization Strategy, as well as the Economic Growth Strategy. New economic growth will come through the development of artificial intelligence and the further robotization of society and automation of industry with ubiquitous superfast communications. It is in advanced techniques and technologies is where the Japanese government has placed its greatest hopes for development and hopes to further increase productivity and the well-being of society. In doing so, it has emphasized the role of software, which should be developed in parallel with the development of hardware and robotics. With an aging population, it is AI and robotics that are expected to play a significant role in improving medical care, as well as support local companies, in view of the shortage of workers in Japan's transportation sector (Shujiro, 2021).

In society 5.0, the world of people, machines and all their surroundings are connected and able to communicate with each other. The concept implies something more than the Internet of Things environment that has been announced for years. Society 5.0 - a super-intelligent society - may be the ultimate bridge between machine and human. The technologies that have determined Industry 4.0 AI, robotics, 3D printing and digital platforms are changing the job market and the demand for individuals. The current generation is set for a more personalized future thanks to the adoption of artificial intelligence algorithms. Digitization, as well as digitalization, is undoubtedly continuously merging the real and virtual worlds, becoming a major driver of innovation and change in all sectors of our economy. The exponentially increasing amount of data and the convergence of various affordable technologies that have emerged with the definitive introduction of information and communication technologies are transforming all areas of the economy (Mohd, Abid, 2020).

One of the hallmarks of society 5.0 will be a changing labor market and worker competencies. Industry 4.0 is having an impact on work and competency profiles, and as a result, new competencies will be needed among employees. Technical competencies will become much less important in the future, and personal skills will become more critical. Figure 3 presents the competence needs of the 4.0 and 5.0 era.

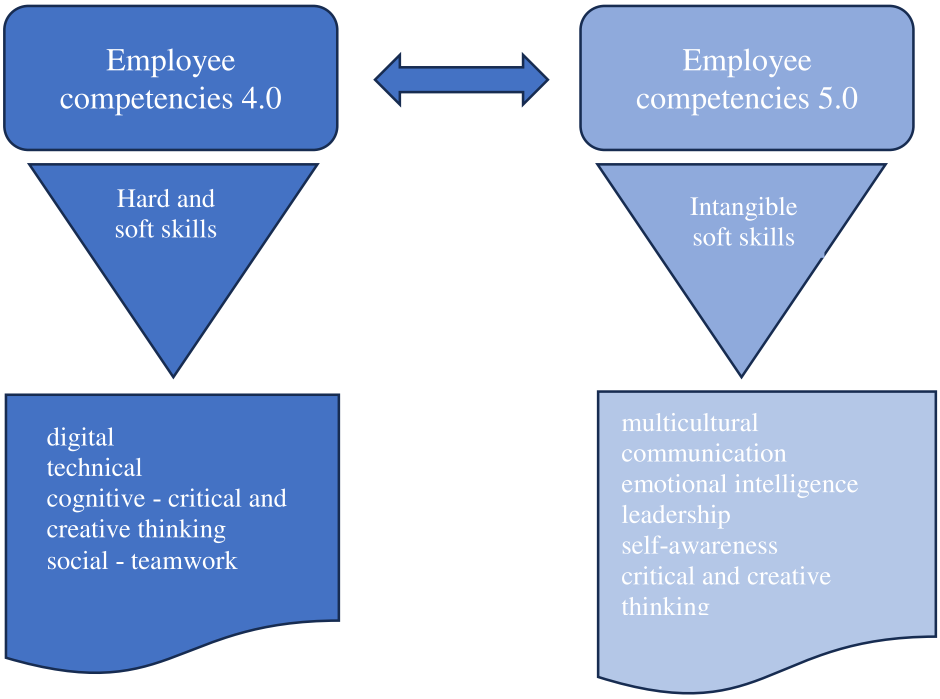

Figure 3. Competency needs of the 4.0 and 5.0 era.

Source: own study.

Analyzing the summary shown in Figure 3, it can be seen that competencies are evolving into so-called soft skills. Multicultural communication, emotional intelligence, self-awareness are emerging. Critical and creative thinking is evident in both Industry 4.0 and 5.0.

4. The cybernetic human-machine-environment system in society 5.0

The development of science and technology induces the human being to strive for comfort regardless of whether the activity is performed professionally or not. Comfort has created the need to analyze the relationship that occurs between man, his actions in the work process and the environment. Each workstation can be represented symbolically in the form of two components, representing the human being on the one hand and the means of work on the other. Its two components are symbolic. Under the concept of man, there can be both an individual and a group of people. The same is true of the second component of the system. The means of labor can be: a tool one piece of equipment or the entire production line. The workstation itself can also be the second element of the system. There are certain processes constantly taking place between these two elements, resulting from their interaction. Both of these elements operate under specific conditions of the external environment. It has an effect on each of these elements (although different). Also, the elements of the system affect the environment, both near and far. Therefore, a more apt term is man-machine-environment system.

The term "system" is understood here as "system". It is ambiguous, referring to a set of rules of conduct or ways of organizing, arranging or subordinating the elements that make up the whole (Osvalder, Ulfvengren, 2017).

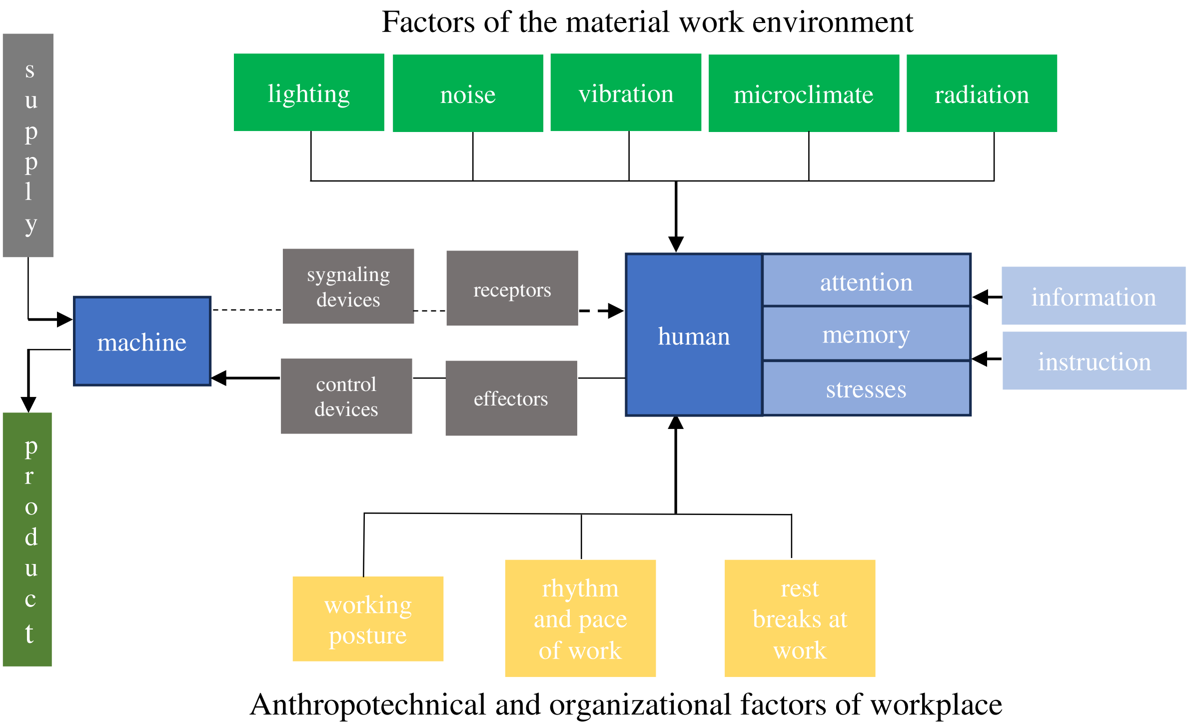

Figure 4. Diagram of man-machine-environment system.

Source: own elaboration based on a survey conducted at a manufacturing company.

The diagram presented above shows how much the human being is burdened in this system. The machine, on the other hand, is supplied with energy, raw materials, and information so that it produces a finished product through human control. Its task is also to signal shortages, defects. In addition to controlling the machine, man must also adapt to the prevailing workplace environment and anthropotechnical and organizational conditions.

Industry 5.0 will significantly increase production efficiency and create versatility between humans and machines, enabling accountability for interaction and continuous monitoring of operations. Industry 5.0 is an evolution of the future designed to harness the creativity of human experts working together with efficient, intelligent and accurate machines (Pizoń, 2022).

Industry 5.0 is a concept that is designed to harmonize the workspace and productivity of humans and machines in a cohesive way. Although Industry 5.0 is already in the implementation phase, global standards and policies are still evolving to make it an international standard (Maddikunta, 2022). This fifth industrial revolution is also more beneficial to society, the environment, the economy and the planet. The concept of Industry 5.0 aims to reverse the dehumanization of industry, taking into account the key role of humans in society and their needs, being closer to sustainable development (Saniuk, 2022).

Another important issue that needs to be addressed is the risks to the worker in the human-machine-society cybernetic system. One risk factor is the stress of human-machine interaction, and the idea of Industry 5.0 proposes solutions and management of psychosocial risks, with the goal of employee well-being in the workplace.

Risk management is becoming a key element in the success of Industry 5.0, as the integration of advanced technologies can bring new challenges in terms of cyber security and data privacy. Likewise, it can bring new risks to employee job security and the physical integrity of machines and equipment. To deal with these risks, risk management in Industry 5.0 must be approached in an integrated manner, including the adoption of risk mitigation and control measures such as remote monitoring and diagnostic systems, access control and user authentication, system redundancy and data backup, training for work and security teams, and the use of advanced failure detection and prevention technologies. Thus, it can be said that Industry 5.0 puts people at the center and restructures their tasks in the production domain to benefit employees and reduce risks (Longo, 2020).

5. Methodology and results

The issue of society 5.0 in the context of occupational health and safety was the subject of a survey at a small manufacturing company in Bydgoszcz. The company employs 42 people, including 34 production workers and 8 administrative employees. In the company, the largest group is made up of employees over 40 years of age, with seniority of more than 15 years and with secondary education. There are very few young and inexperienced employees, only 4 people. Probably the reason for this is the type of work. The sewing room mainly employs women with experience and skills. All of them took part in the survey. Unfortunately, the first filter question reduced the number of respondents to 25. It turned out that 17 employees had not heard of the concept of society 5.0, they do not know what it refers to. Also, their further participation in the survey was impossible. Summary sheet of survey results presents table 2.

Table 2.
Summary sheet of survey results

question from the survey questionnaire	**response scale**				
	definitely no	**no**	**no opinion**	**yes**	**definitely yes**
	1	**2**	**3**	**4**	**5**
1. Are you aware of the concept of society 5.0 and its impact on your company?*	10	7	0	23	2
* 17 employees at this stage completed participation in the study					
2. Does your company consciously manage health and safety at work?	0	0	0	2	23
3. Do you think attitudes toward health and safety are changing for better in the era of society 5.0?	2	3	5	7	8

Cont. table 2.

4. Have you received adequate training on health and safety in the context of society 5.0?	4	16	0	2	3
5. Do you know what technologies and solutions your company is using to improve workplace safety?	5	12	2	4	2
6. Do you feel that your opinions and comments on health and safety are taken into account by the company?	1	14	1	6	3
7. Do you know what the emergency procedures are and how to deal with safety hazards in the workplace?	0	0	0	18	7
8. Do you have access to appropriate personal protective equipment in the workplace?	2	4	2	12	5
9. Are you aware of the risks associated with working in the 5.0 era and what are the countermeasures to minimize them?	3	5	2	11	4
10. Do you think the company is taking sufficient measures to ensure occupational hygiene, especially in the context of new technologies?	2	2	1	15	5
11. Do you think that in the era of society 5.0, the "man-machine-environment" system plays a key role in your field of work?	0	1	0	17	7
12. Do you think that the material work environment factors present at your workplace do not negatively affect occupational hygiene?	3	7	3	7	5
13. Do organizational work environment factors improve your safety and well-being at work?	3	3	3	9	7
14. Have you received adequate training on safety and the use of technology in your work?	2	3	1	4	15
15. Do you think the work environment in the 5.0 era affects your efficiency?	0	0	0	8	17

Source: own study.

Managing occupational health and safety in a manufacturing company requires a strong commitment from the organization's leadership. Employees unanimously agreed that visions of a safe workplace are being consistently built at their company. In contrast, respondents are not entirely convinced that the era of society 5.0 can change anything for the better in the area of occupational health and safety. In addition, as many as 80% of respondents admitted that they do not have had yet the opportunity to participate in training on aspects of safe work in the era of building society 5.0. The same is true of knowledge of solutions and technologies to enhance safety at the workplace, 76% of respondents have no data in this regard. What's more, as many as 64% of respondents believe that their opinion and suggestions on increasing safety and improving occupational health are not taken into account by their superiors. On the other hand, a positive surprise is the fact that all employees participating in the survey are aware of the dangers present at their workplaces and know what action to take at the time of danger. Also, the vast majority emphasize that they have constant access to the necessary personal protective equipment.

The coming era of society 5.0 is not unknown to the employees of the surveyed company, as shown by their answers to the question of whether they are aware of the risks that this new stage of society entails. It turns out that the vast majority know what the risks of entering the era of society 5.0 may be. In addition, employees are very positive about the approach of the organization's management to preparing the workplace in terms of ensuring the safety of staff in the face of the implementation of new technologies.

When asked about the roles of the human-machine-society system, employees answered almost unanimously that it is very important in their work. On the question of the influence of material factors of the work environment on task performance, the answers are very different. 48% of employees believe that these factors do not affect their work activity, which may mean that at their workplaces the presence of these factors is not perceptible or burdensome. In contrast, 40% take the opposite view and feel the annoyance caused by material factors. On the other hand, organizational work environment factors, for as many as 64%, are an important part of creating safe working conditions and improve their comfort at work. Also, a large group of employees, as many as 76% of the surveyed employees confirm that they have been well prepared to work with machines and operate them properly. All employees participating in the survey confirmed that they believe the work environment in the era of society 5.0 definitely serves to improve work efficiency. Figure 5 presents a graphical representation of the aggregate results of the survey.

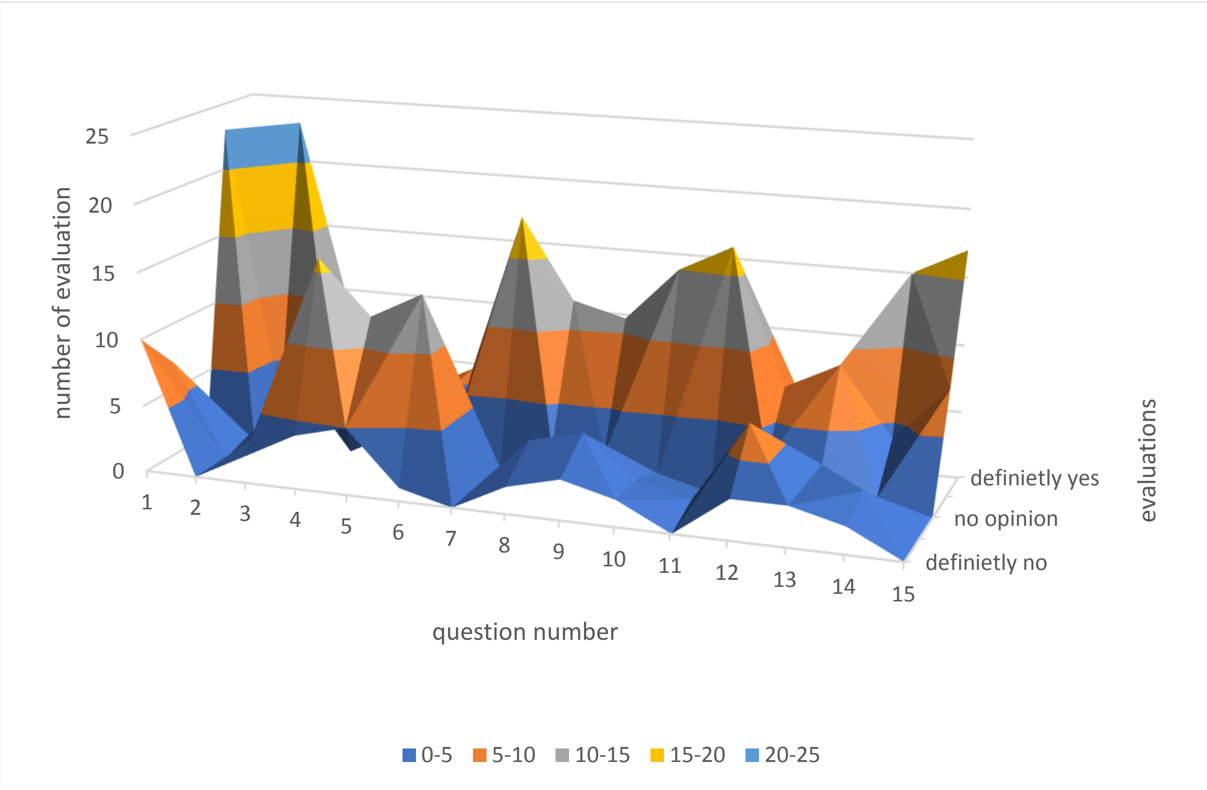

Figure 5. Graphical representation of the aggregate results of the survey.

Source: own study.

A survey conducted at the sewing plant shows that occupational health and safety is becoming an important area of the company's operations. The awareness of both employees and employers is increasing all the time. The new era of society 5.0 is also not something for most employees to fear. They approach this stage with the hope that it will bring changes for the better in the area of occupational health and safety.

In the company under study, the human-machine-environment system functions properly. Employees are aware of the complexity of their work and know that they play an important role in this system. The employer's attention to ensuring proper working conditions is positively perceived by employees. The microclimate is kept within the right parameters, so that employees do not experience fatigue associated with too high or low temperatures. Employees are provided with personal protective equipment, which allows them to effectively minimize noise. Break times are set so that workers can freely reach the dining room, rest and eat a meal. The working position is unfortunately enforced and difficult to change, so after each hour of performing work in a sitting position at the machine, each worker can get up for 5 minutes and during this time perform activities in a standing position.

6. Conclusions

As society 5.0 gains momentum, transforming work environment and human relationships, health and safety issues are becoming more complex and challenging than ever before. It is worth noting that this evolution is opening up new opportunities and challenges for workers, employers and occupational health and safety professionals.

The era of society 5.0 introduces new technologies such as artificial intelligence, the Internet of Things, robotics and automation, which have the potential to revolutionize many industries. But with these innovations also come new safety risks and needs. Employees must be properly trained to operate these technologies and understand the potential risks associated with them. Moreover, in the era of Society 5.0, a "man-machine" partnership approach is key, where people and technology work together, complementing each other. Employee safety is no longer just about avoiding machine-related accidents, but also about protecting against data and cyber security threats. It is important for employers to invest in proper training and procedures so that employees are aware of the risks and know how to deal with emergencies. At the same time, employees should be involved in the decision-making process related to security in their workplace, as they are often the best at identifying potential risks. It is important for employers in a 5.0 society to understand that investments in employee safety and health pay dividends not only in terms of reducing the risk of accidents, but also in terms of increasing the company's efficiency and competitiveness.

In summary, the era of Society 5.0 brings both new opportunities and new challenges for occupational health and safety. For workers, employers and health and safety professionals, there is a need to constantly adapt and evolve to ensure a safe and healthy workplace in this dynamic and innovative environment. But understanding these challenges and acting accordingly can help you succeed and be sustainable in a 5.0 society.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

OUTSOURCING OF FINANCIAL AND ACCOUNTING SERVICES IN BUSINESS MANAGEMENT

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Purpose: The aim of this article is to analyse and evaluate the use of financial-accounting outsourcing services in the management of enterprises. With the development of financial-accounting services, the application of elements of automation and robotisation in financial-accounting IT programmes, the basic function of accounting – the information function – is gaining new importance.
Methodology/approach: In the course of research work, studies of Polish and foreign literature were carried out in the field of: management, accounting, the corporate sector, outsourcing, and IT systems used in accounting. A CAWI (Computer-Assisted Web Interview) survey questionnaire was used as a research tool in the empirical study. The survey was conducted with two groups of respondents: accountants preparing and providing information from the financial accounting subsystem, and managers of enterprises – recipients of information.
Findings: The results obtained cannot be generalised, but they confirm the advantages and disadvantages of using outsourcing services, set new directions for the entrepreneur's communication with the accounting office, and the informational function of accounting in the process of outsourcing financial and accounting services is also gaining new importance.
Practical implications: Development of new channels of communication between the entrepreneur with the accounting office.
Originality/value: The results of the survey provide a new perspective on outsourcing services in the context of the development of modern technologies and new communication and data processing channels and data processing.
Keywords: outsourcing, management, financial and accounting services.
Category of the paper: research paper.

1. Introduction

Outsourcing is a concept well established in the practice of managing organisations. Over the last 50 years, and in Poland since the 1990s, it has evolved from the outsourcing of isolated simple business functions to a strategic management concept. According to this concept, the words formulated by H. Ford: "if there is something we cannot do more efficiently, cheaper and better than our competitors, there is no point in us doing it. We should hire someone to do the job better"(Grudzewski, Hejduk, 2004) are an expression of the adopted philosophy of action. Insufficient knowledge of business owners, complemented by the complicated legal and tax system in Poland, favour the decision to outsource financial and accounting services. Particularly acute problems in this regard are observed in the tax system (Molenda, Burzyńska, 2023). Accounting and financial functions are easily subject to processes of standardisation and coding and are therefore suitable for outsourcing. Business entities decide to outsource a selected area of accounting shiftily due to cost control (Bolcu, Boharu, 2021). In Poland, accounting outsourcing services are carried out both by traditional accounting offices, outsourcing companies offering back-office services implemented as part of BPO (Business Process Outsourcing) and foreign shared service centres named Service Share Centers (Marcinkowska, 2015).

Accounting outsourcing consists of transferring individual accounting functions to external entities in order to reduce operating costs and gain access to accounting expertise and skills. In financial and accounting outsourcing, we should additionally focus on the tasks and functions performed by financial and accounting services (Molenda, Burzyńska, 2023).

The aim of this article is to analyse and evaluate financial and accounting outsourcing services in enterprise management. During the research work, studies of Polish and foreign literature were carried out. The literature research used the method of indirection and deduction. The empirical study then used the methods of synthesis and analysis, using a survey questionnaire as a research tool. An important element of the empirical research was the evaluation of outsourcing services by two groups of respondents: accountants providing information and managers using information in day-to-day decision-making and strategic management. The size of the business entity was used as the main criterion for evaluating financial and accounting outsourcing services and the following research questions were formulated:

- How do accountants rate the advantages of financial and accounting outsourcing?
- How do managers rate the advantages of financial and accounting outsourcing?
- How do accountants rate the disadvantages of financial and accounting outsourcing?
- How do managers rate the disadvantages of financial and accounting outsourcing?
- How do accountants rate the cooperation in the implementation of financial and accounting outsourcing services?
- How do managers rate the cooperation in the implementation of financial and accounting outsourcing services?

The carried-out study allowed for the development of a model for the outsourcing of financial and accounting services oriented towards supporting the implementation of business management functions. The model takes into account the use of modern technologies, online communication between entities and the National System of e-Invoicing, which will become mandatory for entrepreneurs from July 1, 2024.

The article updates the results of the research conducted by the author for her doctoral thesis, entitled: 'Accounting information system in the management of small and medium-sized enterprises'.

2. The essence of outsourcing financial and accounting services in the accounting information system

The term outsourcing comes from the English language and is an abbreviation of three words: outside, resource, and using. In Poland, according to the PWN Encyclopaedia, outsourcing means a management strategy consisting in commissioning to a specialised external company the performance of tasks that are not directly related to the core business of the commissioning company. Outsourcing was designed in the 1970s in the United States. It was based on handing over to external companies some of the inconvenient business functions, e.g., property guarding or cleaning services (Grudzewski, Hejduk, 2004). In Europe, the term 'outsourcing' was first used in 1979 and referred to the acquisition of German automotive projects by British entrepreneurs. In Poland, the development of outsourcing occurred in the 1990s. In the literature, a definition of outsourcing was formulated by Bendor-Samuel. He defined outsourcing as "the entrustment by an organisation of the execution of a specific process to a service provider, specifying in detail the results that the client intends to achieve, but without instructions on how to perform individual tasks, leaving the initiative in this respect to the contractor" (Bendor-Samuel, 2001). According to M.F. Greaver Junior, outsourcing means "the transfer of an organisation's recurring internal tasks, the staff, machinery, equipment, technology and other resources related to their execution, as well as the decision-making competence regarding their use, to external service providers in accordance with the provisions in the contract (contract)" (Greaver Junior, 1999). In the Polish literature, it is worth noting that outsourcing is "an undertaking consisting in separating from the organisational structure of the parent enterprise the functions performed by it and transferring them to be performed by other business entities" (Trocki, 2001). The impact of outsourcing on changing the organisational structure of a company and its contacts with the environment was emphasised by J. Penc. According to him, "outsourcing is the use of comprehensive services that are a combination of various partial services sold and billed as a unit, which are offered by external contractors - bidders" (Penc, 1997). J. Oleński perceives outsourcing as "a method of optimising the use of a company's resources and means, involving the execution of process functions belonging to the tasks of an economic or social entity (enterprise, public administration unit, social institution and others) by external entities" (Oleński, Bliźniuk, Nowak, 2005).

Extensive research on the outsourcing of accounting and tax consultancy, the organisation of the cooperation of entities in the SME sector was conducted by Matejun (Matejun, 2006, pp. 21-29; Matejun, 2009). Determining the importance of employee ethics in accounting outsourcing was dealt with by Góralska (Góralska, 2016). Matejun presented criteria for the selection of an outsourcing provider affecting the quality of cooperation between entities (Matejun, 2009; Matejun, 2011). The competences of employees of accounting offices offering outsourcing services in small entities were analysed by Juźwicka and Zakrzewska-Bielawska (Juźwicka, Zakrzewska-Bielawska, 2014). The organisation of the accounting system as a process in large entities, of which an increasing number of components are purchased in the form of accounting services, was presented by Sobańska (Sobańska, 2011).

The need to reduce operating costs in the activities of business entities to gain access to modern technology and expertise, are increasing the need to outsource financial and accounting services. Accounting functions are becoming the central source of all information and entities are using outsourcing as a strategy to improve their performance. The use of modern technologies is accelerating the digital transformation towards Industry 5.0, in which the execution of all processes, including accounting, is changing (Balicka, 2023). Digitisation and automation support the outsourcing of financial and accounting services by enabling remote service delivery and instant access to accounting data. Accountants freed from the burden of repetitive and routine tasks are more able to focus on value-adding tasks such as reporting and business consulting (Isip, 2022). The use of outsourcing of financial and accounting services by companies has contributed to a different view of the information function of accounting. The information function of accounting, which is changing under the influence of the use of modern technology, is playing a special role towards the creative function, the creation of added value through real-time information provided.

3. Methodology of the study

For the purpose of this article, the author conducted a study of both desk-based and primary data analyses. In the first stage, empirical research on the state of outsourcing of financial and accounting services in the management area was reviewed. Based on the analysis of the literature review, the author decided to select two groups of respondents for the primary research. One of them were the accountants participating in qualification courses organised by the Accountants Association in Poland – Regional Branch in Bydgoszcz. The other group are the managers/directors/owners managing companies. Within both groups, detailed criteria were defined for the entry of a particular group into the survey, hence the sample selection was purposive.

Methodology for surveying accountants

In the group of accountants, it was taken as the main classification criterion that the respondent should have completed at least Level II, III, IV certification of the accounting profession. This criterion ensured that reliable information was obtained from a person with appropriate professional qualifications. Providing high quality financial information requires knowledge and competence supported by a certificate. In the group of accountants, the research tool was a survey questionnaire prepared both in paper form: PAPI (Paper and Pencil Interview), and CAWI - Computer - Assisted Web Interview. Semi-open questions with the option to answer 'Other (What?)', and closed questions were used, and a nominal scale (including Likert-type scale) was adopted as part of the measurement scale. The survey was addressed to 164 accountants attending qualification courses. Upon receipt of the return of the questionnaires submitted, a validation of the questionnaires was carried out. 144 complete and properly completed questionnaires were obtained. The numerical data were coded into a matrix in the form of an Excel file, into which data were also incorporated from the electronic survey collection system.

Methodology for surveying companies

In the case of enterprises, it was assumed that the respondent completing the survey questionnaire must be a person holding one of the following positions in the enterprise:

- owner/manager of the company,
- holding a top management position (strategic level),
- holding a middle management position,
- holding a management position at operational level.

As in the group of accountants, the research tool was a CAWI (Computer - Assisted Web Interview) survey questionnaire, which included questions analogous to those for the group of accountants. The questionnaire was addressed to 474 entities cooperating with the Centre for Knowledge and Technology Transfer of the Bydgoszcz University of Science and Technology. 107 correctly completed questionnaires were accepted for an in-depth analysis. The size of the enterprise was adopted as the comparative criteria of both groups relating to the assumed aims of the study. After the completion of the surveys carried out in both groups, the results were collated and conclusions were drawn, which served to develop the concept of outsourcing financial and accounting services presented in section 5 of the article.

4. Results of the study

The survey was conducted among accountants participating in 2nd, 3rd, 4th degree courses conducted by the Accountants Association in Poland – Regional Branch in Bydgoszcz. A total of 144 accountants participated in the survey. The most numerous groups of respondents consisted of accountants employed in small entities: 76 persons, followed by medium-sized entities: 52 persons, and large entities: 16 respondents.

In the following inquiry, the respondents answered the question about their job position in the company. The results are shown in Figure 1.

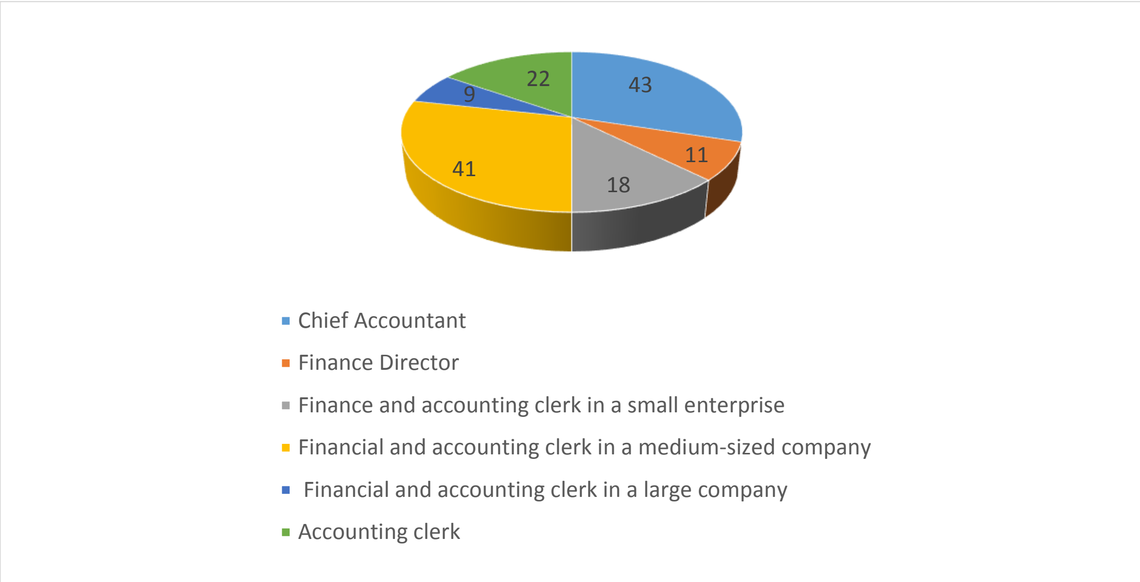


Figure 1. The position occupied by the accountant.

Source: own study.

Most frequently, the respondents surveyed were employed in the position of chief accountant: 43 respondents, and in the finance and accounting services of medium-sized enterprises: 41 respondents. The survey also included 11 finance directors, 22 employees of accounting offices and 18 employees of finance and accounting services of small enterprises, and 9 employed in large entities. Employees of companies in the manufacturing, service and retail sectors participated in the survey.

In the relevant part of the survey, respondents first assessed the advantages of outsourcing their bookkeeping. The results are shown in Table 1.

Table 1.
Advantages of entrusting financial and accounting services to an external entity in the opinion of accountants

Advantages of entrusting financial and accounting services to an external company	Small entrepreneurs	Medium entrepreneurs	Large entrepreneurs
sense of security resulting from the comprehensive provision of services	35,0%	51,0%	30,8%
saving of time	64,9%	67,3%	64,3%
lower costs than in-house financial and accounting department	55,7%	57,1%	50%
receiving up-to-date information about changes in legal, tax and accounting regulations	63,0%	67,3%	38,5%
avoidance of errors, penalties, reimbursement of subsidies received	61,3%	65,3%	30,8%
preparation of necessary reporting for the entity	54,3%	22,4%	53,8%
provision of individual solutions adapted to the company's needs	43,1%	36,7%	46,1%
quality of outsourcing services/access to expert knowledge	59,9%	69,4%	38,5%
support in making business decisions	41,2%	55,1%	38,5%
ensuring data security in the IT financial and accounting programme	63,2%	51,0%	30,8%

* The results represent the sum of the definitely important and important categories.

Source: own study.

In the opinion of accountants, saving time is *definitely important* and *important* in entrusting financial and accounting services to an external entity. Accountants employed by small entities additionally pointed to the avoidance of penalty errors (61.3% of indications), ensuring the security of financial and accounting data (63.2% of indications) and lower costs than an in-house financial and accounting department.

Medium-sized accountants rated the quality of outsourcing services/access to professional knowledge (69.4% of indications), receipt of up-to-date information on changing legal/tax regulations (67.3% of indications) and, similarly to small accountants, avoidance of mistakes (65.3% of indications) as *important* and *definitely important*. Respondents employed in large entities rated the advantages of outsourcing financial and accounting services lowest, pointing to time savings (64.3% of indications) and preparation of reporting for the entity's needs (53.8% of indications).

In the next question, respondents rated the disadvantages of outsourcing financial and accounting services. The results are presented in Table 2.

Table 2.
Disadvantages of outsourcing financial and accounting services in the opinion of accountants

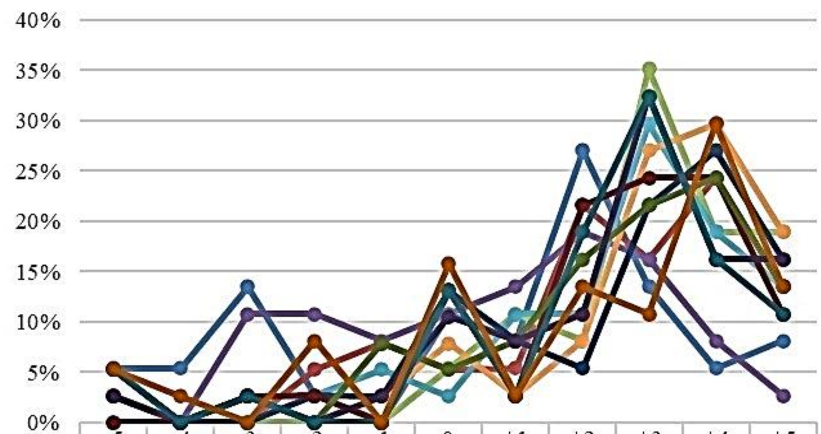
Disadvantage of outsourcing financial and accounting services to an external company	Small entrepreneurs	Medium entrepreneurs	Large entrepreneurs
limitation to the knowledge and experience of one outsourcing company	27,2%	46,9%	69,2%
lower level of control over financial and accounting documentation	56,1%	49%	84,6%
lack of knowledge of company specifics/individual approach	65,1%	32,7%	61,5%
longer time of realization of orders	56,7%	61,2%	69,2%
lack of current access to financial and accounting data	57,4%	71,4%	69,2%
risk of losing financial and accounting data	34,3%	44,9%	61,5%
lack of support in taking business decisions	56,3%	61,2%	69,2%

* The results represent the sum of the definitely important and important categories.

Source: own study.

All the disadvantages mentioned in the questionnaire of finance-accounting outsourcing services to an external entity were rated by accountants working in large entities as *important* and *definitely important*. Accountants working in medium-sized entities additionally pointed to the longer lead time (61.2% of indications), lack of current access to financial data (71.4% of indications) and lack of support in making business decisions (61.2% of indications). Accountants employed by small entities were least likely to perceive disadvantages of outsourcing accounting services. They pointed out the lack of company-specific knowledge/individual approach (65.1% of indications) and the lack of support in business decision-making (56.3% of indications).

Accountants offering outsourced services evaluated their cooperation with companies. This cooperation was assessed by accountants employed by small and medium-sized entities and accounting offices. Large entities employing accountants had their own finance and accounting departments. As far as weaknesses were concerned, two aspects were highlighted: the timeliness of delivered documents, and errors in delivered accounting documents, which was particularly important in the aspect of cooperation with an outsourcing company. The most frequently indicated advantages were the storage of accounting documents (76% of total indications for values from +3 to +5) and the qualifications of the employees of the accounting office (73% of total indications for values from +3 to +5). Next in order of importance, indicated by 65% of the respondents, was both time saving in accounting and tax decisions, and the risk of losing data in the financial and accounting programme. The results are shown in Figure 2.



	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
timeliness of delivery of documents	5%	5%	14%	3%	0%	11%	8%	27%	14%	5%	8%
organisation of work in the accounting office	3%	0%	0%	5%	8%	5%	5%	22%	16%	24%	14%
qualification of the staff of the accounting office	3%	0%	0%	0%	0%	5%	11%	8%	35%	19%	19%
errors in supplied accounting documents	0%	0%	11%	11%	8%	11%	14%	19%	16%	8%	3%
control of accounting documents	5%	0%	3%	3%	5%	3%	11%	11%	30%	19%	14%
storage of accounting documents	3%	0%	3%	0%	3%	8%	3%	8%	27%	30%	19%
risk of loss of data	5%	0%	0%	3%	3%	13%	8%	5%	22%	27%	16%
costs of accounting office services	0%	0%	3%	3%	0%	13%	3%	22%	24%	24%	11%
sense of security in business	3%	0%	3%	0%	8%	5%	8%	16%	22%	24%	14%
saving time	3%	0%	3%	0%	3%	11%	8%	11%	32%	16%	16%
support in making business decisions	5%	0%	3%	0%	0%	13%	3%	19%	32%	16%	11%
sufficient number of staff office	5%	3%	0%	8%	0%	16%	3%	14%	11%	30%	14%

Figure 2. Weaknesses and strengths of business cooperation with an outsourcing company.

Source: own study.

In the next stage of the survey process, business managers responsible for carrying out the management function in the entities were interviewed. 107 entrepreneurs correctly filled in the survey questionnaire. The most numerous groups were entrepreneurs/owners of small entities with 62 respondents, followed by the medium-sized ones with 39 respondents and the large ones with 6 managers. The job structure of entrepreneurs is shown in Figure 3.

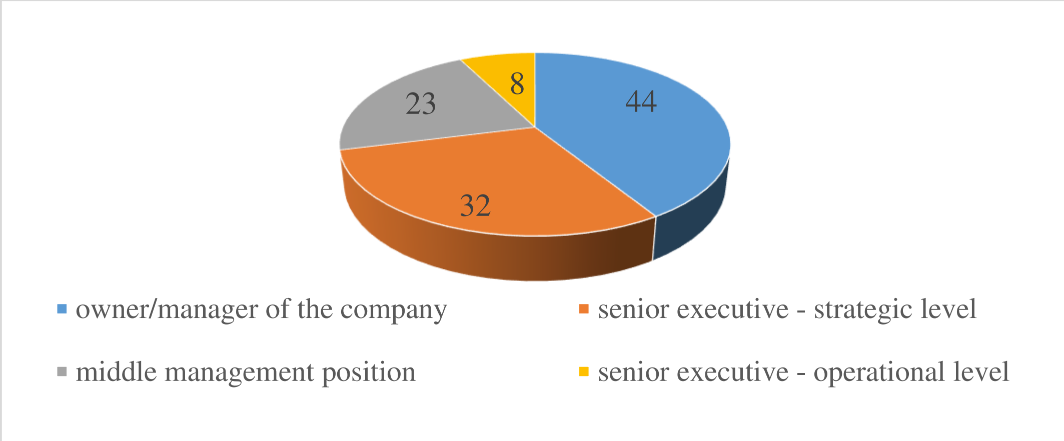


Figure 3. The position occupied by the manager.

Source: own study.

Forty-four owners/managers took part in the survey, 32 strategic level managers, 23 middle managers. Eight respondents held an operational level position. The managers first rated the advantages of financial and accounting outsourcing services. The results are shown in Table 3.

Table 3.
Advantages of entrusting financial and accounting services to an external entity in the opinion of managers

Advantages of entrusting financial and accounting services to an external company	Small entrepreneurs	Medium entrepreneurs	Large entrepreneurs
sense of security resulting from the comprehensive provision of services	64,6%	52,6%	33,3%
saving of time	75,4%	60,5%	50%
lower costs than in-house financial and accounting department	71,3%	55,3%	50%
receiving up-to-date information about changes in legal, tax and accounting regulations	76,3%	50,0%	33,3%
avoidance of errors, penalties, reimbursement of subsidies received	85,8%	63,2%	16,8%
preparation of necessary reporting for the entity	86,3%	73,7%	33,3%
provision of individual solutions adapted to the company's needs	34,6%	57,9%	50%
quality of outsourcing services/access to expert knowledge	79,7%	51,5%	33,3%
support in making business decisions	44,1%	42,4%	33,3%
ensuring data security in the IT financial and accounting programme	70,2%	51,5%	33,33%

* The results represent the sum of the definitely important and important categories.

Source: own study.

The advantages of financial and accounting outsourcing services were most appreciated by managers of small entities. In their opinion, the preparation of the necessary reporting for the entity's needs (86.3% of indications), the avoidance of penalties, errors (85.8% of indications) and the quality of outsourcing services/access to professional knowledge (79.7% of indications) are *definitely important* and *important* in the outsourcing of financial and accounting services. Managers also highlighted time savings (75.4% of indications) and receiving current information on tax changes (76.3% of indications). Managers of medium-sized entities confirmed that, in their opinion, it is *definitely important* and *important* to prepare the necessary reporting for the entity (73.7% of indications), to avoid error penalties (63.2% of indications) and to save time (60.5% of indications). The responses of middle managers coincide with those of managers of small entities. Other advantages were indicated by managers of large entities. Half of the respondents considered the provision of individual solutions tailored to the needs of the entity and lower costs than an in-house finance and accounting department to be *important* and *definitely important*. Managers of large entities, similarly to small and medium-sized ones, also pointed to time savings.

In the next question, similarly to accountants, managers rated the disadvantages of financial and accounting outsourcing services. The results are presented in Table 4.

Table 4.
Disadvantages of entrusting financial and accounting services to an external entity in the opinion of managers

Disadvantage of outsourcing financial and accounting services to an external company	**Small entrepreneurs**	**Medium entrepreneurs**	**Large entrepreneurs**
limitation to the knowledge and experience of one outsourcing company	18,8%	55,3%	50%
lower level of control over financial and accounting documentation	44,2%	68,4%	83%
lack of knowledge of company specifics/individual approach	37,9%	73,7%	50%
longer time of realization of orders	24,2%	73,7%	33,3%
lack of current access to financial and accounting data	52,5%	76,3%	50%
risk of losing financial and accounting data	18,8%	68,4%	33,33%
lack of support in taking business decisions	47,9%	78,9%	67%

* The results represent the sum of the definitely important and important categories.

Source: own study.

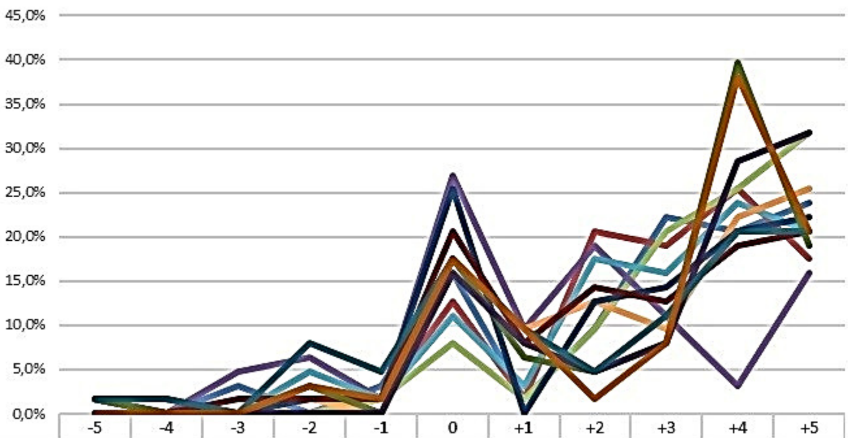
As in the group of accountants, the greatest disadvantages of financial and accounting outsourcing services were indicated by managers of large entities, pointing to the lack of control over accounting records (5 respondents) and the lack of support in making business decisions (4 indications). These concerns were also confirmed by managers of medium-sized entities (68.4% of indications) and (78.9% of indications) respectively. Managers of small entities also considered lack of current access to financial data (52.5% of indications) and lack of support in making business decisions as *important* and *definitely important* disadvantages. However, this was the least numerous group. Managers provided additional comments on financial and accounting services:

- accounting office staff are only accounting operators,
- sufficient knowledge is possessed by the manager/owner of the office,
- employees of accounting offices are not sufficiently trained, only the managers are,

- external financial and accounting service providers do not have full financial and operational knowledge of the company,
- the client using external services does not have comprehensive knowledge in the financial and accounting sphere, which causes numerous gaps in the flow of information.

These causes entail the risk of mistakes being made, a lack of control over accounting records and, as a result, the loss of ability to react quickly enough in crisis or control situations.

The surveyed managers were also asked whether they had cooperated with companies offering financial and accounting outsourcing services. Of the companies surveyed, 51% used finance and accounting outsourcing services (76% of small entities, 20% of medium-sized entities) large entities had their own finance and accounting department. The group of respondents using outsourcing services was asked to evaluate the cooperation, as presented in Figure 4.



	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
timeliness of delivery of documents	0,0%	0,0%	3,2%	0,0%	3,2%	15,9%	1,6%	9,5%	22,2%	20,6%	23,8%
organisation of work	1,6%	0,0%	0,0%	0,0%	1,6%	12,7%	1,6%	20,6%	19,0%	25,4%	17,5%
qualification of the staff of the accounting office	1,6%	0,0%	0,0%	0,0%	1,6%	7,9%	1,6%	9,5%	20,6%	25,4%	31,7%
errors in supplied accounting documents	1,6%	0,0%	4,8%	6,3%	1,6%	27,0%	9,5%	19,0%	11,1%	3,2%	15,9%
control of accounting documents	1,6%	0,0%	0,0%	4,8%	1,6%	11,1%	3,2%	17,5%	15,9%	23,8%	20,6%
storage of accounting documents	1,6%	0,0%	0,0%	1,6%	0,0%	17,5%	9,5%	12,7%	9,5%	22,2%	25,4%
risk of loss of data in the financial and accounting programme	1,6%	0,0%	0,0%	1,6%	1,6%	25,4%	0,0%	12,7%	14,3%	20,6%	22,2%
costs of accounting office services	0,0%	0,0%	1,6%	1,6%	1,6%	20,6%	7,9%	14,3%	12,7%	19,0%	20,6%
sense of security in business	1,6%	0,0%	0,0%	3,2%	0,0%	17,5%	6,3%	4,8%	7,9%	39,7%	19,0%
saving time in making accounting and tax decisions	1,6%	1,6%	0,0%	0,0%	0,0%	15,9%	7,9%	4,8%	7,9%	28,6%	31,7%
support in making business decisions	1,6%	1,6%	0,0%	7,9%	4,8%	17,5%	9,5%	4,8%	11,1%	20,6%	20,6%
sufficient number of accounting office staff	0,0%	0,0%	0,0%	3,2%	1,6%	17,5%	9,5%	1,6%	7,9%	38,1%	20,6%

Figure 4. Evaluation of the strengths and weaknesses of cooperation between companies and an outsourcing company - opinion of managers.

Source: own study.

In the overall evaluation, the company's cooperation with the outsourcing company was assessed from the perspective of strengths. Disadvantages of outsourcing services were indicated to a small extent. Some of the categories indicated were difficult for the respondents to define as weaknesses or strengths, e.g. errors in the provided accounting documents indicated by 27% of the respondents, or the risk of losing data in the financial and accounting programme 25.4%. Small companies were much more active in the category of strengths, pointing above all, to time savings in accounting and tax decisions, a sufficient number of office staff in relation to the number of companies serviced and a sense of security in business activities. In terms of assessing the disadvantages and weaknesses of cooperating with or entrusting financial and accounting responsibilities to outsourcing companies, managers expressed concern about proper communication, resulting in the company not having adequate information, especially in terms of current access to financial and accounting data.

5. A management-oriented model for outsourcing financial and accounting services

Modern applications are streamlining the communication process between financial and accounting outsourcing entities and accounting offices. Process automation is transforming the outsourcing of financial and accounting services, providing businesses with innovative solutions that improve business operations. Entrepreneurs are becoming business partners with modern accounting firms that understand the specifics of their business and find the best solutions to streamline their operations. Access to up-to-date and specialised knowledge of accounting staff, fixed assets in the form of equipment/software allow for better business efficiency, lower labour costs and higher profitability (Maszczak, 2019). Currently, the development of financial and accounting outsourcing services is influenced by online communication. The need for the client to deliver documents in person or for office staff to collect them has disappeared. This has an impact on time savings and the possibility for both parties to carry out effective activities (Jonas, Świetla, 2015).

The general model of an enterprise with entities offering financial and accounting outsourcing services is presented in Figure 5. The following model takes into account the process of financial and accounting outsourcing, starting with the input data provided by the client, data transfer using a modern application ensuring online communication, control of received documents, preparation of documentation by the accounting office in accordance with the provisions of the cooperation agreement, quality control of the work done before sending it to the client (again using the application), output data in the form of documents, reports, reports available to the client. The proposed model takes into account the National e-Invoice System KSeF), which will be applicable to entrepreneurs from July 1, 2024. KSeF is an online system for sending, receiving, and storing structured invoices, which will require entrepreneurs to report in real time (Pokrop, Pałys, 2021). The basis of KSeF is the input of structured invoices in XML format, as established by the Ministry of Finance. The system will check the correctness of the documents and authorise its circulation (Burchart, 2022). Entrepreneurs and providers of financial and accounting outsourcing services may have to decide on the form of cooperation – the transfer of documents.

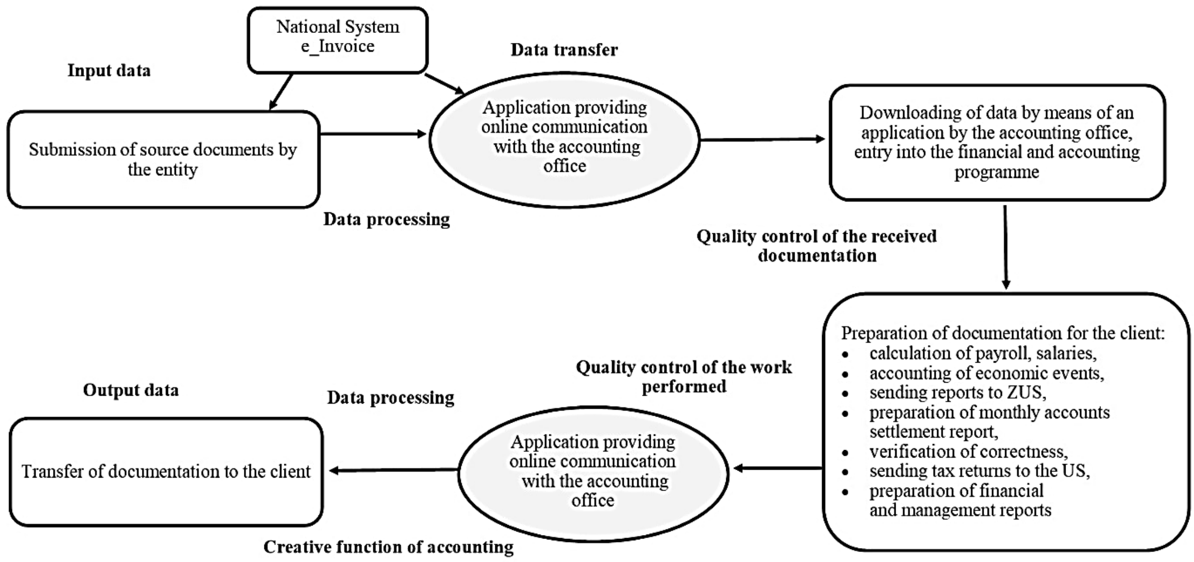


Figure 5. General model for financial and accounting outsourcing services to support business management.

Source: own study.

Companies implementing the proposed model can gain:

- improved communication process in exchange of documents, information,
- time savings due to automation of activities,
- real-time access to financial and accounting documentation,
- access to additional functions offered by the application, streamlining other areas of the entity's activities, allowing efficient communication,
- data security.

When implementing a model of cooperation using online communication between entities, it is necessary to determine the best way of communication and data exchange and to adapt the accounting, HR and payroll processes and reporting to the specifics of the industry and the entity's information needs. The use of a modern application will provide the business with:

1. the possibility to issue invoices to contractors: send invoices online, manage filters, add attachments, set up payments, payment reminder payment reminders,
2. the rapid online exchange of documentation with the accounting office: seamless exchange of documents between entities online, all documents in one application, ensuring data storage security,
3. the possibility of using an internal drive for archiving and storing documents,

4. the automation of accounting processes: completion of contractor data by TIN, electronic document circulation, payment management,
5. the enrichment of the application with a finance module allowing for the generation of financial forecasts, financial control, simple budgets and KPIs (Key Performance Indicators) at this stage: key performance indicators adapted to the specificity and information needs of the company.

Automation of accounting processes is changing financial and accounting outsourcing services. Accountants become specialists who systematically analyse the financial situation of an entity, provide advice, and indicate areas of change. Outsourcing financial and accounting services, longer business relationships between entities may lead to higher quality of financial statements because the risk of their distortion is reduced due to the knowledge and independence of external accountants (Höglund, Sundvik, 2016; Cullinan, Zheng, 2017). The above solutions require high-quality technical equipment and an Internet connection. They place the accounting profession in a new reality that should be followed by educational institutions (Faitusa, 2019).

6. Conclusions

With the emergence of new business models and technological solutions, outsourcing of financial and accounting services is becoming an increasingly beneficial form of cooperation between business entities. Still, most entities offering financial and accounting outsourcing services focus their offer on traditional solutions: keeping accounting books, preparing annual reports, monthly and annual tax returns, HR and payroll matters, and providing information on basic changes in tax and legal regulations. We are currently observing far-reaching changes in the nature and form of this cooperation. Entrepreneurs expect an expansion of the service offer and new solutions that improve the exchange of information between entities. Entrepreneurs are looking for support in running a business and making decisions by anticipating their consequences.

According to accountants, the most important advantage of financial and accounting outsourcing services was saving time for entrepreneurs and access to specialist knowledge, i.e., receiving current information on changes in legal, tax and accounting regulations. Accountants indicated the most important disadvantages of delegating accounting to an external entity: lack of knowledge about the specificity of the company/individual approach, lack of current access to financial and accounting data. Accountants from medium-sized enterprises also indicated a longer order processing time. For entrepreneurs, the most important limitations in using outsourcing services are the lack of current access to financial and accounting data and the lack of support in making business decisions.

According to the conducted research, the most frequently recurring limitations and concerns on the part of entrepreneurs in using financial and accounting outsourcing services were lack of current access to financial and accounting data and lack of support in making business decisions. Additionally, entrepreneurs pointed out communication problems:

- receiving information at the last minute,
- insufficient information and shifting of responsibility between the entrepreneur and the accountant,
- failure to provide information in a clear and precise manner,
- lack of additional services, e.g., decision-making consultancy, reports, monthly reports.

Modern entities offering financial and accounting outsourcing services appearing on the Polish market combine accounting, legal and IT knowledge, creating and recognizing a new approach to the accounting information system and the information function in this system. In such solutions and the proposed model in Figure 5, the information function of accounting evolves towards the creative function, because the information received by the entrepreneur in the outsourcing process creates added value.

The development of online cooperation between enterprises and entities offering outsourcing services and the resulting benefits, according to the author, will be an interesting field for future empirical research.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

WINE MARKET DEVELOPMENT IN POLAND AND ITS IMPACT ON REGIONAL ATTRACTIVENESS

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Purpose: The primary purpose of this article is to present issues related to the development of the wine market in Poland and its influence on the attractiveness of regions. The specific aim is to identify contemporary trends in the development of the wine market and to analyze their impact on the growth of regional interest.
Design/methodology/approach: The author focused on analyzing the available literature and sources of information on the wine market, wine regions, trends, and their influence on the attractiveness of regions. The author based his considerations on Polish and foreign literature, studying scientific articles and electronic sources. To collect scientific literature, the author used the following professional scientific databases: Library of Science and Google Scholar.
Findings: In recent years, Poland has become a significant producer of wine, which attracts investment and stimulates the development of local economies. The observed increase in the quality of Polish wines makes wine regions more competitive internationally, which translates into increasing wine production and quality. This dynamic development of the wine market in Poland has a positive impact on the attractiveness of the regions, contributing to increased wine production, the promotion of local culture and heritage, the development of the catering industry, support for sustainable agricultural development, and the development of the tourism sector.
Social implications: An increase in wine consumption in Poland has been noted since the 1990s, and Poland is becoming an increasingly promising market with long-term development prospects. Despite this, Poles still consume considerably less wine than the European Union average and even ten times less per capita than citizens of traditional wine regions. This indicates a significant, as yet untapped potential. Polish consumers are becoming increasingly knowledgeable about wine and are showing a growing interest in the beverage. What is more, wine fits in perfectly with current trends. Consumers today approach alcoholic beverages with increasing attentiveness. Tastings, celebrations, and the skillful pairing of wine with meals are increasingly valued, adding a unique flavor to everyday routines. It is observed that declines in the wine category are much smaller compared to other alcoholic beverages. It is worth understanding that these short-term declines are mainly due to the current economic situation and are only a temporary phenomenon. The future of the wine market in Poland, therefore, seems promising (ISBNews, 2023).
Originality/value: The author aimed the article at entities/recipients including, but not limited to, entrepreneurs in the wine industry, investors who are considering investing in vineyards, wineries, or related services; people working in the tourism industry, including owners of hotels, restaurants, tourist agencies, etc., who can gain insight into how the developing wine

market affects the attractiveness of tourist regions. Those working in local and regional government - can find inspiration in the article on how to use wine development to promote and develop their regions. Consumers and those interested in learning more about winemaking can also find information on trends and opportunities in Polish wine in the article.
Keywords: history of winemaking in Poland, development of the wine market, attractiveness of regions, wine tourism.
Category of the paper: Research paper.

1. Introduction

Wine-making traditions in Poland have their roots going back to the Middle Ages, although, over the centuries, they have experienced periods of boom and stagnation. However, the vital impulse for winemaking in Poland was the country's accession to the European Union. Currently, based on data from the National Agricultural Support Centre (KOWR), the Polish wine market is developing intensively. In 2020/2021, 8 691.84 hectolitres of wine were marketed, in terms of approximately 1 million 159 thousand 0.75 liter bottles (KOWR, 2022). According to statistics, as of 15 September 2023, there were 552 wine growers in Poland, cultivating vines on an area of 835 hectares, as well as 267 entrepreneurs conducting activities related to the production and bottling of wine products (KOWR, 2023).

In turn, according to Eurostat data, Poland imported 268 357 hectolitres of wine in the 2021/22 marketing year. According to a report by the NielsenIQ Institute, the value of the entire category amounted to around PLN 4.3 billion, an increase of 7.6% compared to 2021. In terms of volume, the segment recorded a minimal decline of just 0.3%. Total sales of wines and liqueurs in Poland amounted to PLN 4.7 billion, an increase of 10.3%. In addition, research has shown a growing interest in flavor, especially in the sparkling wine category. In the first half of 2023, sales of so-called 'spritzers' increased by almost 9% in value terms.

Interestingly, Poland is showing great interest in wine production, and the rate of development of Polish winemaking stands out even in the international arena. Between 2009 and 2021, the area of vineyards increased more than 17 times, and wine production in Poland increased as much as 34 times. The number of entities involved in wine production increased 18-fold. In the 2021/22 season, 6 358.08 hectolitres of red wine and 12 083.71 hectolitres of white wine were produced in Poland, making a total of 18 444.79 hectolitres (XBS PRO-LOG S.A., 2023).

In addition, the development of the wine market can also have a significant impact on the attractiveness of regions, both economically and in terms of tourism. A growing wine sector can influence the attractiveness of regions in such aspects as job creation, wine tourism, development of tourism infrastructure, increase in production of local products, development of culture and heritage, impact on property values, and impact on education and research.

However, it is worth noting that a growing wine market can also present specific challenges, such as the need for sustainable water management and environmental protection. Therefore, wine is essential to develop sustainably to preserve its unique identity and traditions.

The main objective of the article is to present issues related to the development of the wine market in Poland and its impact on the attractiveness of regions. The specific objective is to identify contemporary trends in the growth of the wine market and to analyze the effects of the increase in interest in the region.

2. Methodology

The author used the Desk Research method to prepare the above article. Desk Research is a type of research that involves collecting information and data from available secondary sources, such as publications, reports, scientific articles, statistics, databases, archival materials, and online sources, without collecting primary data. It is one of the basic research methods used in social sciences, business, and other fields.

The author focused on analyzing available literature and information sources on the wine market, wine regions, trends, and influence on the attractiveness of regions. The author based his considerations on Polish and foreign literature, studying scientific articles and electronic sources.

The bibliography includes 24 items: scientific articles and electronic sources. In the desk research analysis, the author used professional scientific databases. The author used these scientific databases due to the possibility of collecting literature for this article.

3. The history of winemaking in Poland

The history of winemaking in Poland goes back a long way, beginning in the pre-Christian period. From ancient times, wine has played an important role in the country's culture and economy. Ancient sources indicate that winemaking on Polish soil already existed in the 9th century (Wituch, Wróbel, 2002). At that time, the leading wine producers were monasteries, which ran vineyards on Polish territory (Wituch, Wróbel, 2002).

The first vineyards on Polish territory appeared as early as the 13th century, often established in the surroundings of castles and monasteries (Kubal, Piziak, 2010). The areas where these vineyards were located were mainly around Kraków, Krosno, Sandomierz, Lublin and Włocławek and Płock (Milan-Lewicka, 2022). In the 14th century, King Casimir the Great played a crucial role in developing winemaking in Poland, supporting its growth. Kraków became a significant wine-making center during this period (Wituch, Wróbel, 2002).

The turn of the sixteenth and seventeenth centuries brought a significant cooling of the climate, which influenced the decline of viticulture in Poland and increased imports of wines from southern Europe (Makowski, Miętkiewska-Brynda, 2015). These were difficult times for domestic winemaking. It was not until the first half of the 19th century that Polish winemaking was revived, especially in today's Lower Silesia and Lubuskie Voivodeship (Brodnicka, 2019).

During the partition period and later, during the communist rule, winemaking in Poland suffered due to the policy of the partitioners and the collectivization of agriculture (Chwalba, 2000).

After regaining independence in 1918, winemaking began to revive, and the inter-war years were a period of growth for the industry (Dorosz, 1992). Unfortunately, World War II and its aftermath caused a regression that led to the almost complete disappearance of vineyards on Polish soil (Pink, 2015). On the other hand, after World War II, winemaking in Poland suffered due to communist policies (Chwalba, 2000).

Only after the political transformation in Poland in the late 1980s and early 1990s winemaking started to develop dynamically. The number of wineries increased, and the quality of Polish wines gained international recognition (Kuligowski, 2016).

Poland became an increasingly important wine producer, gaining recognition among wine lovers and experts worldwide (Kuligowski, 2016).

Contemporary winemaking in Poland is much more developed than in the past and enjoys growing recognition at home and abroad. Polish wines are winning awards at international competitions, and wine regions such as Małopolska, Lower Silesia, and Lubuskie are becoming increasingly attractive to wine lovers and tourists alike.

It was only in 2009 that the European Union fully legalized Polish wines, opening up new opportunities and development prospects for the industry.

A significant stage in the development of the Polish wine market was the amendment to the Excise Duty Act of 2008 (Council Regulation (EC) No 491/2009 of 25 May 2009). This amendment provided for the exemption of producers from the obligation to maintain a tax warehouse provided that wine production did not exceed 1,000 hectolitres per year. The amendment was necessary to adapt the national legislation to the requirements of the European Union. Moreover, it is essential to consider the dynamic development of the wine industry in Poland (Wójcik, 2022).

The new legislation on wine production and regulation of the wine market is set out in the Act of 2 December 2021 on wine products (Dz.U. 2022, item 24). The new law, which came into force on 7 March 2022, replaced the regulations in force since 12 May 2011 concerning the production, bottling, and marketing of wine products, as well as the organization of the wine market.

The new Act defines the rules for the organization of the wine market, setting out, among other things, issues relating to the making and labeling of fermented wine products. The provisions also include guidelines on conducting business activities related to both the production and bottling of wine. An essential element of the Act is the introduction of an obligation to keep records of vineyards in Poland. Vine producers are obliged to make a one-off entry in this register at the request of a person cultivating vines. The vineyard register is open to the public. It is kept by the Director General of the National Agricultural Support Centre, who is also responsible for registering entities involved in the production and bottling of wine products (Wójcik, 2022).

In addition, the new regulations require producers of wine from their cultivation to notify the National Support Centre for Agriculture of their plans to make wine from grapes and to do so by mid-September of the wine year in question at the latest. This notification is compulsory and aims to provide information on wine production. The new law also introduces specific obligations for wine producers and standardizes standards relating to the certification of varietal and vintage wines. It also defines the body responsible for liaising with the European Commission on wine market issues, the Minister of Agriculture and Rural Development. As part of the control of vine cultivation, the Provincial Plant and Seed Inspectors are responsible for monitoring the compliance of data on the names and origin of vines reported by growers. On the other hand, the Provincial Inspectors of Commercial Quality of Agricultural and Food Products certify varietal and vintage wines at the request of the producer; they also carry out official control of outgoings and incomes, transport documents of wine products, and control the commercial quality of wine marketed. This new law has contributed to regulating the wine market in Poland, creating clear standards and rules for the industry (Wójcik, 2022).

4. Current state of the wine market in Poland

Due to the evolving model of alcohol consumption, consumers in Poland, as in other countries, are more and more willing to choose grape wines, which is confirmed by growing sales levels. In the 2020/2021 marketing year, 2740.04 hl of white wine and 5951.80 hl of red wine were marketed.

In the 2021/2022 marketing year, KOWR (the National Agricultural Support Centre) also recorded a 15% increase in the number of producers and entrepreneurs applying for an entry in the register kept by the Director General of KOWR compared to the previous 2020/2021 marketing year. A 10% increase in the area of notified vineyards is also observed compared to the previous marketing year, which is evidence of a continuing trend in the development of winemaking in Poland.

Data collected by the National Agricultural Property Fund indicates that in the 2021/2022 marketing year, the most significant areas of vineyard cultivation are observed in the Lubuskie (ca. 115 ha), Małopolskie (ca. 88 ha), Dolnośląskie (ca. 75 ha), Zachodniopomorskie (ca. 60 ha) and Podkarpackie (ca. 59 ha) voivodeships. Vineyards are also being established in other provinces, even those not usually associated with wine production due to unfavorable climatic conditions, such as the Warmińsko-Mazurskie Province (Agricultural and Agribusiness Promotion Agency, APRA).

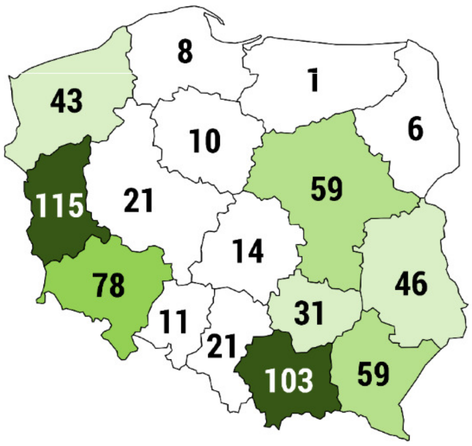

Figure 1. Area of vineyards in (ha) reported to NEB for the 2021/2022 wine year.

Source: winogrodnicy.PL, 11.08.2023.

The provinces with the largest area of vineyards are Lubuskie (115 ha) and Małopolskie (103 ha). Other provinces with smaller vineyard areas are Dolnośląskie (78 ha), Mazowieckie (59 ha), Podkarpackie (59 ha), Lubelskie (46 ha) and Świetokrzyskie (31 ha). According to the data, the voivodship with the smallest vineyard area is Warmińsko-Mazurskie (1 ha).

Table 1.
Wine production and sales in Poland 2009/2010 - 2021/2022 marketing years - Data as of 23.08.2022

Year	Number of producers (in the records)	Total area under vines (in ha)	Quantities of wine grapes (in quintals)	Sales in the marketing year concerned (in hl)
2009/2010	21	36,01	n.d.	n.d.
2010/2011	20	37,02	662,70	247,88
2011/2012	26	51,28	680,73	294,42
2012/2013	35	96,87	1 436,93	276,79
2013/2014	49	99,49	3 131,20	802,82
2014/2015	76	134,35	4 499,89	1 524,07
2015/2016	103	194,24	8 093,36	2 124,82
2016/2017	150	221,23	10 849,97	2 990,63
2017/2018	201	331,38	7 976,20	3 963,66
2018/2019	230	394,84	18 210,33	6 374,40
2019/2020	294	475,35	21 150,82	7 863,97
2020/2021	329	564,34	21 806,74	9 328,17
2021/2022	380	619,42	28 496,60	-

Source: National Agricultural Support Centre "Wine market in numbers", data as of 23.08.2022, https://www.kowr.gov.pl/interwencja/wino, 22.10.2023.

The number of wine producers has steadily increased in the period under review. In 2009/2010, there were only 21, while in 2021/2022, there were already 380. This suggests that more and more people and businesses are interested in wine production in Poland. The area under vines (in hectares) is also increasing year on year. In 2009/2010, it was 36.01 ha, and in 2021/2022, it will reach 619.42 ha. The number of producers and the area under cultivation is also increasing, translating into a significant increase in wine production. The amount of grapes for winemaking (in quintals) is increasing significantly, reaching 28,496.60 quintals in 2021/2022. The result of the changes taking place is an increase in wine sales. Wine sales, expressed in hectolitres (hl), are growing dynamically over the period under review. In 2010/2011, it amounted to 247.88 hl, and in 2020/2021, it will reach 9 328.17 hl. This is a significant increase, which confirms the increased interest in wine in Poland.

Table 2.
List of wine producers making wine in the wine year 2021/2022 and intending to make wine in the wine year 2023/2024 by province, as of 2023.10.13

	Voivodship	**List of wine producers making wine in the wine year 2021/2022**	**List of wine producers intending to make wine in the wine year 2023/2024**
1.	Małopolskie	72	78
2.	Lubuskie	46	58
3.	Dolnośląskie	40	54
4.	Lubelskie	38	49
5.	Podkarpackie	41	47
6.	Świętokrzyskie	24	35
7.	Wielkopolskie	18	26
8.	Śląskie	17	20
9.	Mazowieckie	25	18
10.	Zachodniopomorskie	9	18
11.	Łódzkie	13	16
12.	Opolskie	14	13
13.	Kujawsko-pomorskie	10	13
14.	Pomorskie	6	9
15.	Podlaskie	1	4
16.	Warmińsko-mazurskie	2	3
Suma:		376	461

Source: own compilation based on National Agricultural Support Centre, List of wine producers making wine in the wine year 2021/2022 and intending to make wine in the wine year 2023/2024 (as of 13.10.2023), https://www.gov.pl/web/kowr/wykazy--rejestry, accessed on 24.10.2023.

The table above shows the number of wine producers in each province in two different periods: in the 2021/2022 wine year and the 2023/2024 wine year. This shows the dynamics of the development of this industry in Poland, where an increase in the number of wine producers can be seen in the future. The total number of wine producers in all provinces is 376 in the 2021/2022 wine year and rises to 461 in the 2023/2024 wine year, reflecting the growing interest in winemaking in the country.

In addition, the most significant number of producers is in the Małopolskie and Lubuskie provinces. Regions play an important role in Polish winemaking. Most of the voivodships recorded an increase in wine producers between the two years analyzed. This demonstrates the growing interest in the wine industry at the regional level. There are differences in the intensity of growth, with some voivodships, such as świętokrzyskie, showing a more pronounced increase than others, which suggests that in these regions, winemaking is at a relatively early stage of development and is attracting new producers.

Table 3.
The most extensive vineyards in Poland

Name of vineyard	Area (ha)	Voivodship
Turnau	34,00	zachodniopomorskie
Samorządowa w Zaborze	33,40	lubuskie
Srebrna Góra	18,50	małopolskie
Charbielin	27,00	opolskie
Jaworek	18,50	dolnośląskie
Dom Bliskowice	11,00	lubelskie
Gostchorze	11,00	lubuskie
Silesian	11,00	dolnośląskie
Aris	10,20	lubuskie
Marcyporęba	10,00	małopolskie
Milsko	10,00	lubuskie

Source: own compilation based on the Enoportal. pl vineyard search engine, https://www.enoportal.pl/winnice/, 24.10.2023.

The data analysis in the table above allows several key conclusions. Firstly, the variation in the vineyard area is noticeable. The largest vineyard, Turnau, has a significantly larger area (34 ha) than the others. However, the other vineyards also occupy significant areas, indicating significant viticulture in these regions. Secondly, it should be noted that vineyards are located in various provinces, which illustrates the geographical diversity of wine production in Poland. The largest vineyards are located in the zachodniopomorskie, lubuskie, małopolskie and opolskie voivodships. Thirdly, the Lubuskie Province seems to have a relatively large number of vineyards, with four listed as the largest. This may suggest that it is an essential region for winemaking in Poland. The diversification of provinces and vineyard sizes indicates the diversity of wine producers and varieties in Poland.

5. The impact of wine market development on the attractiveness of the region

Regional attractiveness, as defined, is a complex concept that refers to the ability of a geographical area to attract investment, people, and tourists and to create conditions conducive to economic and social development. The attractiveness of a region is based on several factors, such as infrastructure, resource availability, quality of life, education, culture, public policy, and many other elements that influence the level of investment attraction, population migration, and development of a region (Kotler, 1993; Dwyer, Kim, 2003; Dicken, 2011; Porter, 1998). According to A. Smith (2000), "the attractiveness of a region is the degree of investment attraction and population migration, based on a combination of economic, social, cultural and environmental factors that influence the region's development".

Thus, regional attractiveness is a concept that refers to the set of characteristics and factors that make an area or region interesting, desirable, and attractive to people, investors, tourists, and businesses. A region's attractiveness can be assessed from different perspectives and encompass many aspects. The key factors that influence a region's overall attractiveness are presented below:

- economy - a strong and sustainable regional economy is often considered a key attractiveness factor. This means the presence of businesses, their generation of jobs, investment opportunities, and the economic stability of businesses and residents;
- education - the presence of reputable schools, universities, and research centers can attract students and professionals and promote innovation and technological development;
- quality of life - a high quality of life, access to healthcare, safety, culture and entertainment, and access to parks and recreational areas can attract residents and tourists;
- infrastructure - good road, rail, port, airport, and telecommunications infrastructure to facilitate transport and communication within the region;
- culture and heritage - a rich cultural offer, monuments, festivals, traditions, and heritage attract art and history lovers and tourists;
- nature - beautiful landscapes, national parks, access to the sea, mountains, etc. can attract nature lovers and tourists;
- cost of living - an acceptable cost of living, including housing, food, health care, and education, can influence the attractiveness of a region;
- safety - high levels of security and low crime rates make a region more attractive to residents and investors;
- access to markets and trade - the geographical location of a region and access to national and international markets can be an important factor for businesses;
- innovation and technological development - the presence of technology companies, technology parks, and innovative clusters can attract entrepreneurs and investors.

It is worth pointing out that the attractiveness of a region is a subjective concept that can vary according to the needs and expectations of different sections of society. For some people, an attractive region is a place with a strong labor market and a growing economy; in contrast, for others, it may be an area with beautiful nature and a rich cultural heritage. In practice, many regions seek to develop and promote their store to become more attractive to different stakeholder groups. In this context, it should also be remembered that the impact of vineyards on the development of a region's attractiveness is also more fragmented than comprehensive. Their impact will be visible in selected areas such as:

- job creation - increased wine production requires more workers in vineyards, wineries, and wine-related industries such as wine tourism. This can create new jobs in the region, increasing the attractiveness for people looking for work;
- wine tourism - wine regions often attract tourists who visit, taste wines, and enjoy the beauty of the surrounding countryside. This can boost tourism and attract both domestic and international visitors, which has a positive positively impacting;
- development of tourism infrastructure - to meet the growing needs of tourists, wine regions can invest in developing tourism infrastructure such as hotels, restaurants, cycle paths, walking routes, and tourist information centers. This, in turn, can make the recenters attractive to visitors;
- increase in the production of local products - winemaking often goes hand in hand with the production of other local products, olive oil, or food products. This can increase the region's attractiveness as a place to taste the region's attractiveness and heritage development;
- culture and heritage development - winemaking can influence the region's culture and heritage development attractive to history and culture enthusiasts;
- impact on property values - wine regions that become more popular can also gain property values. Investors may become interested in buying such regions, which can increase investment attractiveness;
- impact on education and research - the development of winemaking may also influence the development of wine-related research and education. This can attract students and researchers to the region, which in turn leads to job creation and increase the importance of the educational center.

An example of a winery that has had a significant impact on job creation is Kendall-Jackson Vineyard Estates, located in California, USA. Kendall-Jackson is one of the largest wine producers in the Sonoma County region and is known for its innovative winemaking practices. Kendall-Jackson Vineyard Estates demonstrates how large vineyards can create a variety of jobs in different sectors, from agriculture and manufacturing to the areas of tourism, education, food service, and wine-related industries. In this way, the development of a single vineyard can significantly contribute to the creation of jobs throughout the region.

An example of a Polish winery that significantly contributes to the attractiveness of the region is the Trzebnickie Hills Winery, located near Trzebnica, Lower Silesia province. This vineyard attracts tourists both because of its picturesque location and its offer of wine tasting and vineyard tours. This contributes to increased interest in the region and generates tourist traffic. It regularly hosts a variety of cultural events, such as concerts, festivals, and fairs of local products. These events attract not only wine lovers but also the general public, increasing the attractiveness of the region. The winery cooperates with local producers and businesses, which promotes the development of the local economy. The Trzebnica Hills winery also engages in wine education, offering workshops and training for those interested in the subject. This contributes to raising consumer awareness of local wine, in addition to engaging in sustainable development practices, which increases the region's attractiveness among those interested in ecology.

6. Conclusions

The author's analysis of the literature on the subject was intended to answer whether and in which areas/aspects the development of the wine market in Poland affects the attractiveness of regions.

Currently, the wine market in Poland is experiencing dynamic development, which has a positive impact on the attractiveness of regions in the country. This article analyses the potential impact of this development on the regions. In recent years, Poland has become a significant wine producer, which attracts investment and develops local economies. The noticeable increase in the quality of Polish wines makes wine regions more competitive on the international market, increasing the production and quality of Polish wines.

In addition, the increased interest in Polish wines contributes to the development of oenotourism, which boosts tourist traffic in wine-growing regions. In turn, wine regions are becoming attractive tourist destinations, which benefits local entrepreneurs, hotels, restaurants, and other service providers.

Winemaking also helps to promote local cultural heritage and traditions, which enriches the identity of the regions. Wine festivals and wine-related cultural events attract the attention of tourists and locals, supporting the development of local culture and regional heritage.

In addition, the growth of the wine market is also encouraging the development of the catering sector, favoring local food producers and restaurants. New partnerships are being formed between winemakers and restaurateurs, which supports the growth of the catering industry in wine regions.

The growth of the wine market also encourages investment in viticulture, which can contribute to sustainable agricultural development. Winemaking can and often does support ecology through organic farming practices and preserving natural areas.

The development of the wine market in Poland has a positive impact on the attractiveness of regions. It contributes to the growth of wine production, promotes local culture and heritage, develops gastronomy, supports sustainable agricultural development, and develops the tourism sector. It is also worth remembering that with the growing demand for products of unique value, it can be forecast that wine tourism may be one of the opportunities contributing to the development of the local tourism industry and increasing the attractiveness of regions.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

LABOUR MARKET AND LIVING CONDITIONS OF LUBUSKIE VOIVODESHIP'S RESIDENTS, CURRENT STATE AND FUTURE

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Purpose: The purpose of the publication is to present changes in the Lubuskie labor market and their impact on the living conditions of the local community.
Design/methodology/approach: The paper uses statistical data and source materials.
Findings: The article presents the most important issues related to the labor market and analyzes key indicators, GDP dynamics, employment rate, directions of social policy development in order to present the changes taking place in Lubuskie province.
Originality/value: The article is aimed at people interested in analyzing the labor market, living conditions of the population, people also interested in regional policy.
Keywords: labour market, regional development, region, Lubuskie Voivodeship.
Paper cathegory: research paper.

1. Introduction

Nowadays, when the labour market and living conditions of the inhabitants of the Lubuskie Voivodeship are increasingly becoming the area of various research, an attempt was made to examine the relationship between these two factors. This region, located on the western border of Poland, is a unique subject of research on these connections, taking into account its specific challenges and development prospects.

The aim of this paper is to analyse current and future trends in the Lubuskie labour market and their impact on the living conditions of the local community. For this purpose, it is necessary to identify key issues, challenges and opportunities related to economic development, employment and quality of life of the population. The specific objectives of this work focus on the following areas: 1) The current situation on the Lubuskie labour market, taking into account key indicators such as the unemployment rate, salary level and employment structure, 2) Key economic sectors in the region and identification of their potential and challenges, 3) Assessment of the impact of the labour market on the living conditions of the population in terms of income, education and access to health care, 4) Forecasts and scenarios for the development of the labour market and living conditions in the Lubuskie Voivodeship, considering global factors such as demographic trends and climate changes, 5) Identification of potential public policies and initiatives that can improve the labour market and the quality of life of the voivodeship's inhabitants.

2. The labour market and the living conditions of residents

The Lubuskie Voivodeship is located in the western part of Poland, covering an area of 13,988 km^2, which means that it covers 4.8% of the country’s area. It borders on three voivodeships, and the western border of the region is also the border between Poland and Germany. From the east, Lubuskie borders with the Wielkopolska Voivodeship, in the south with the Lower Silesia Voivodeship, and in the north with the West Pomerania Voivodeship. The Lubuskie Voivodeship consists of 12 counties and 82 communes, of which 39, i.e. the majority, are rural communes, 34 are urban-rural communes and 9 urban communes. The level of industrialization of this region is associated with the largest economic centres in two main cities – Zielona Góra and Gorzów Wielkopolski and industrial zones located in the Special Economic Zone in Kostrzyn, Słubice, Nowa Sól and Gubin (Social Policy Strategy…, 2021, p. 14).

Lubuskie Voivodeship is located in the central-western part of Poland. The region's area is 13,988 km^2 (4.5% of the country's area), which places Lubuskie in 13th place among Polish provinces. With a population of just over 1 million people, the region is the second voivodeship in the country with the smallest population (after the Opolskie Voivodeship). Lubusz citizens make up 2.6% of Poland's population. Lubuskie borders the Greater Poland Voivodeship to the east, the Lower Silesia Voivodeship to the south, and the West Pomeranian Voivodeship to the north (Development Strategy of Lubuskie Province 2030, 2021, p. 5).

An asset of the region, but also a challenge, is its inter-metropolitan location - proximity to the Berlin, Wroclaw, Poznan and Szczecin agglomerations, as well as accessibility to strategic transportation routes of international importance. Two corridors of the base network of the Trans-European Transport Network TEN-T, North Sea-Baltic and Baltic-Adriatic, with the A2 highway (Berlin-Warsaw) running along them - latitudinally, and the S3 expressway (Swinoujscie-Lubawka) running longitudinally. The TEN-T comprehensive road network, meanwhile, includes national road No. 18 (A18), which is part of the Berlin - Wroclaw route. Thanks to its favorable location, Lubuskie Voivodeship is an attractive area for investment, settlement and leisure. Extensive cooperation and progressive integration with German neighbors, as well as the activity of various institutions (including businesses, educational and cultural institutions), taking advantage of the resulting opportunities, create favorable conditions for the development of the voivodeship (Development..., 2021, p. 5).

The current situation on the Lubuskie labour market, taking into account key indicators such as the unemployment rate, salary level and employment structure. According to the Labour Force Survey (LFS), in the fourth quarter of 2018, the number of economically active population (i.e., according to the survey's definition, the number of people considered employed or unemployed) in Lubuskie Province was 436 thousand. In relation to the same quarter of the previous year, this number decreased by 7.0 thousand, i.e. by 1.6%, with both the number of employed (by 1.2%) and the number of unemployed (by 13.3%) being lower than in the fourth quarter of 2017 (Statistical Office in Zielona Góra, 2019, p. 14).

Labour market in Lubuskie Voivodship in 2019. According to the results of the Labour Force Survey (LFS) conducted in 2020, the number of economically active people aged 15 and over in the Lubuskie Voivodeship decreased annually. The number of employed people also decreased and the number of economically inactive people increased, as a result of which the burden of the working population on the non-working population increased in 2020. To illustrate: there were 863 unemployed people per 1,000 workers, more than a year earlier. The economic activity rate and the LFS employment rate then decreased year on year (Statistical Publishing House, 2021, p. 12). During the Labour Force Survey, professionally active and inactive people were subjected to a detailed analysis depending on their place of residence, the results are presented in Table 1.

Table 1.
Division into active and passive people by place of residence

Specification	Professionally active						Professionally passive		
	total (in thousands)			working (in thousands)					
Year	**2018**	**2020**	**2021**	**2018**	**2020**	**2021**	**2018**	**2020**	**2021**
Total	436	433	432	423	424	423	359	357	347
Cities	286	283	282	278	277	277	232	230	221
Villages	150	151	149	145	147	146	128	127	126

Source: Own study based on: Labour market in Lubuskie Voivodship in 2020, Statistical Office in Zielona Góra, Statistical Publishing House, Zielona Góra, 2018, p. 14; Labour market in Lubuskie Voivodship in 2020, Statistical Office in Zielona Góra, Statistical Publishing House, Zielona Góra, 2020, p. 14; Labour market in Lubuskie Voivodship in 2020, Statistical Office in Zielona Góra, Statistical Publishing House, Zielona Góra, 2021, p. 14.

According to the obtained results, out of a total number of 433 thousand professionally active people in 2020 in the Lubuskie Voivodeship, 424 thousand are working people, of which 277 thousand are urban residents, and 147 thousand are villagers. Among the professionally inactive (357 thousand), 230 thousand are city dwellers, and 127 thousand – village inhabitants. There was little variation in the rate depending on place of residence. The employment rate of urban residents increased slightly by 0.2 percentage points to 54.1% compared to the previous year. The employment rate among rural residents amounted to 52.9% and was 0.9 percentage point lower than a year earlier. The majority of employees (65.3%) were urban residents, numbering 277,000, unchanged from the previous year. 147,000 people worked in the countryside, which was 0.4% less than a year earlier (Statistical Publishing House, 2021, p. 17).

In 2020, the number of job admissions in enterprises employing nine or more employees decreased compared to the previous year, but the most admissions were recorded in industry and the transport and warehousing branch (Statistical Publishing House, 2021, p. 12).

The 2020 LFS study provided interesting data on the relationship between professional activity and education of the voivodeship's inhabitants. It was found that employment rates varied significantly by educational level. The highest employment rate, but 0.9 percentage points lower than a year ago, was recorded among people with higher education, at 79.2%. In the group with post-secondary and secondary vocational education, the employment rate was 57.3%, which meant a decrease by 2.8 percentage points, and in the group with basic vocational education it was 55.7%, i.e. a decrease by 0.1 percentage point. The employment rate of people with general secondary education was 51.8%, which meant a decrease of 0.7 percentage points compared to 2019. The lowest employment rate was recorded among people with lower secondary education, primary education and no education and amounted to 15.3% (Statistical Publishing House, 2021, p. 18).

The labor force participation rate, i.e. the percentage of the economically active population between the ages of 15 and 89, has been increasing slightly in recent years. Its value in 2021 was 55.5%, up 0.3 percentage points from the previous year. Nationally, the labor force participation rate was 57.8%, 2.0 percentage points higher than in the previous year. In all provinces, the value of this indicator was higher than the year-ago figure, ranging from 52.9% in the Subcarpathian Voivodeship to 61.9% in the Mazovian Voivodeship. Thus, Lubuskie ranked 12th ahead of the West Pomeranian, Silesian, Warmian-Masurian and Subcarpathian provinces.

In 2021, the labor force participation rate for men was 64.1%, 16.7 percentage points higher than that for women. In relation to the previous year, the labor force participation rate for men decreased 0.5 percentage points (against an increase of 0.5 percentage points in 2020), while in the female population it increased by 1.0 percentage points (to 47.4%, against a decrease of 0.4 percentage points a year ago) (Statistical Publishing House, 2022, p. 15).

Key economic sectors in the region and identification of their potential and challenges. There are enterprises representing almost all economic sectors in the Lubuskie Voivodeship: food, printing, paper, chemical and furniture. The economic sector that is particularly strongly represented is construction. The numerous presence of industrial plants of various sizes allows for the sustainable use of local raw material resources. In the Lubuskie Voivodeship, the number of registrations of new enterprises is relatively high, but in the case of enterprises operating on the market for many years, the level of adaptation to changes in the market and business reality is often unsatisfactory. They adapt poorly to new challenges and opportunities, as evidenced by a decrease in the number of national economy entities per 1,000 inhabitants, which is observed in more than half of the communes of the Lubuskie Voivodeship. Insufficient market activity of entrepreneurs is one of the most serious economic problems affecting the Lubuskie Voivodeship, leading to growing problems that must be understood by representatives of local governments of the region's communes (bip.lubuskie.pl).

Due to the data collected in the "Socio-economic diagnosis of the Lubuskie Voivodeship" from 2019, it was established that in 2016 the Gross Domestic Product in the voivodeship amounted to PLN 41,348 million, which represented 2.2% of the national GDP. The years 2012 and 2014 saw the highest GDP dynamics in the Lubuskie Voivodeship on a national scale, while in 2013, 2015 and 2016 the lowest GDP rate was recorded than the national average (bip.lubuskie.pl). The data in question are presented in Table 2.

Table 2.
Dynamics of Gross Domestic Product in the Lubuskie Voivodeship compared to other voivodeships

	Total GDP dynamics over 5 years				
	2012	**2013**	**2014**	**2015**	**2016**
Lubuskie	102,3	100,4	103,8	102,9	102,6
Poland	100,6	101,4	103,3	103,8	103,1
The place of the Lubuskie Voivodeship among voivodeships in terms of GDP growth dynamics	3	13	3	11	8

Source: Own study based on: *Socio-economic diagnosis of the Lubuskie Voivodeship*, 2019, p. 23, https://bip.lubuskie.pl/system/obj/43883_Diagnoza_strategiczna.pdf?fbclid=IwAR1vppREBPxcYBBd2t3MsUQyhzzMV5lkCdMX-rq5knzxqVslPPYzGejJ7FY, 10.11.2023.

According to the data in Table 2, in the years 2012-2016 the Lubuskie Voivodeship approached the results of the national average GDP per capita, i.e. from 83% in 2012 to 83.9% in 2016. Although there was a slight increase in this indicator, it was recognized as a positive signal and the possibility of reversing the trend from 2005-2011. During this period, the level of GDP increased, but its percentage decreased. This was mainly because there was a dynamic development of neighbouring voivodeships in which there were large urban agglomerations (bip.lubuskie.pl).

Table 3.
GDP in Lubuskie province over 2016-2022

Title	Total gross domestic product						
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
	[mln zł]	[mln zł]	[mln zł]	[mln zł]	[mln zł]	[mln zł]	[mln zł]
Poland	1 853 205	1 982 794	2 126 506	2 288 492	2 337 672	2 631 302	3 067 495
Lubuskie	41 262	43 412	46 099	48 996	50 026	56 102	65 163

Source: Own study based on: Statistical Office, Local Data Bank, https://bdl.stat.gov.pl/, 8.01.2024.

Table 4.
Total gross domestic product dynamics

Title	Total gross domestic product dynamics, previous year = 100						
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
	[%]	[%]	[%]	[%]	[%]	[%]	[%]
Poland	103,0	107,0	107,2	107,6	102,1	112,6	116,6
Lubuskie	103,5	105,2	106,2	106,3	102,1	112,1	116,1

Source: Own study based on: Statistical Office, Local Data Bank, https://bdl.stat.gov.pl/, 8.01.2024.

Assessment of the impact of the labour market on the living conditions of the population in terms of income, education and access to health care. In 2020, the average monthly gross salary in the Lubuskie Voivodeship increased further compared to the previous year, representing 87.6% of the national average. The number of beneficiaries of pensions and annuities paid by the Social Insurance Institution continued to increase, but the number of beneficiaries of the Agricultural Social Insurance Fund decreased (Statistical Publishing House, 2021, p. 12). The structure of the labour market influences the occurrence of various types of negative behaviour in society. Among such problems occurring in the Lubuskie Voivodeship, alcoholism and drug addiction pose a serious threat because they are particularly important due to their complexity, social and economic costs. The negative effects of alcohol and drug abuse, caused by various factors – including unemployment, are widely known and can be observed in many areas of social life (Municipal Program for…). One of the undesirable phenomena associated with alcoholism is the destabilization of families. It was noticed that the main reasons for placing children in foster care, also in the Lubuskie Voivodeship, are the parents' alcoholism as well as care and educational insufficiency. Other important reasons for placing children in family foster care are: semi-orphanhood, the presence of at least one of the parents abroad and the disability of at least one of the parents. According to data from Lubuskie orphanages, as of March 31, 2020, there were 33 homes in the region with 521 children (bip.lubuskie.pl).

According to data from the "Social Policy Strategy of the Lubuskie Voivodeship for 2021-2030", residents of the Lubuskie Voivodeship have a total of 23 hospitals at their disposal, functioning as hospital treatment facilities. In 2019, there were 573 clinics in the Lubuskie Voivodeship, most of them located in the commune of Zielona Góra (108 clinics) and Gorzów Wielkopolski (82 clinics). Taking into account the number of facilities in the voivodeship, most (63 facilities) are located in the Nowa Sól district and the least in the Wschowa district. According to the Central Statistical Office (CSO), health care expenses increased by 12% in 2019 and amounted to an average of PLN 63.84 per household member per month. Employment in this sector in 2019 in the Lubuskie Voivodeship was as follows: 4,415 nurses and a total of 2,610 doctors, 551 paramedics, 474 physiotherapists, 568 midwives and 246 dentists were employed in health facilities. The least numerous staff were physiotherapists (22), clinical psychologists (40) and psychologists (151), which may not be sufficient considering the large number of people struggling with various types of psychological problems (Social Policy Strategy…, p. 48).

Forecasts and scenarios for the development of the labour market and living conditions in the Lubuskie Voivodeship, considering global factors such as demographic trends and climate change. When attempting to shape the direction of social policy development, key demographic data should be taken into account: 1) total population, 2) age groups in the economic context, 3) population structure by gender, 4) population structure by urban and rural areas, and 5) demographic dependency ratio (Social Policy Strategy…, p. 17). Age groups in an economic context can be traced with the example of employment. In 2020, in the Lubuskie

Voivodeship, the highest employment rate was recorded among people aged 35-44, it amounted to 86.7% and meant an increase of 1.5 percentage points every year. The age group 45-54 also recorded a high rate of 80.5%, but it was a decrease of 2.1 percentage points, and the age group 25-34 – 78.7% (an increase of 1.5 percentage points). In the remaining age groups, specifically from 15 to 24 years and over 55 years of age, employment rates were much lower and amounted to 27.5% and 24.9%, respectively (Statistical Office in Zielona Góra, p. 17). The data in question is presented in the chart in Figure 1.

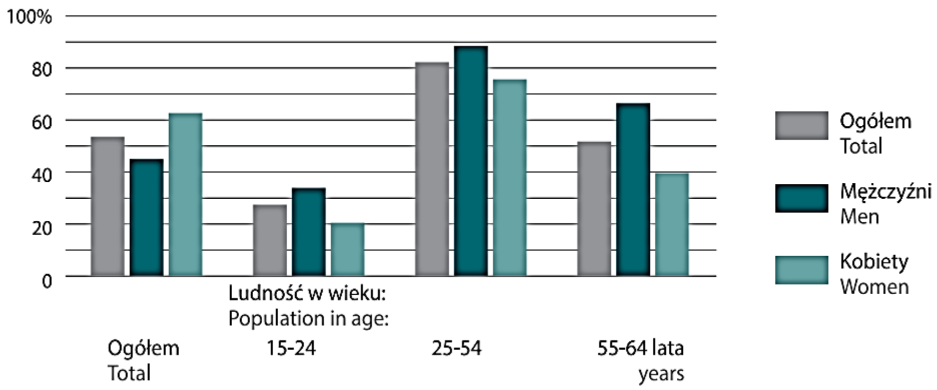

Figure 1. Employment rate in the Lubuskie Voivodeship in 2020.

Source: *Labour market in Lubuskie Voivodship in 2020*, Statistical Office in Zielona Góra, Statistical Publishing House, Zielona Góra, 2021, p. 17.

However, the analysis of data for the years 2014-2019 confirmed the downward trend forecast in the "Social Diagnosis of the Lubuskie Voivodeship" until 2020 in terms of the total population and the working-age population. In terms of the total population, the projected decrease in the number of inhabitants was to amount to 1,007,600, and population of working age to 597,700. It was forecast that in 2030 the population of the voivodeship would amount to 979,702, which means a decrease of approximately 3.15% compared to 2019 (Social Policy Strategy…, p. 18). Demographic changes are observed especially in the distribution according to the place of residence, where, according to the statistics of the Central Statistical Office, the increasing trend in the number of rural inhabitants applies only to people of post-working age, while in other categories significant declines are observed in this area (Social Policy Strategy…, p. 19). The small number of specialists, such as clinical psychologists and employment psychologists in health facilities, is a cause for concern, considering the large number of people with mental problems resulting from various factors diagnosed in the Lubuskie Voivodeship.

Identification of potential public policies and initiatives that can improve the labour market and the quality of life of the voivodeship's inhabitants. According to data published by the Central Statistical Office in 2020, a large number of people with disabilities live in the Lubuskie Voivodeship. It even turned out that the Lubuskie Voivodeship took first place in Poland with an indicator of 886 people per 10,000. inhabitants. This group also includes people with certificates of incapacity for work. Due to this situation, the Lubuskie Voivodeship has undertaken actions to counteract the phenomenon of exclusion and other negative effects of disability. These activities include social and vocational rehabilitation, through activities at occupational therapy workshops, and vocational rehabilitation, including sheltered workshops and professional activity (Social Policy Strategy…, pp. 30-31). Occupational therapy workshops, of which there are 19 in the region, are facilities providing rehabilitation in order to acquire skills needed for employment. On the other hand, sheltered workshops and vocational activity centres aim at vocational rehabilitation of people with disabilities.

In 2020, in the Lubskie Voivodeship, there were 39 employers who received the status of a sheltered workshop, including two cooperatives for disabled people. Two of them had the status of disabled people's cooperatives (Social Policy Strategy…, p. 31). The alcohol problem, drug addiction and other addictions is of particular interest to local authorities due to the negative effects on the local community and the labour market. This phenomenon is even more disturbing because, according to the study "Diagnosis of the use of psychoactive substances by residents of the Lubuskie Voivodeship" (polityka-spoleczna.lubuskie.pl) conducted by Sławomir Kozieł in 2015, the number of people consuming alcohol in the Lubuskie Voivodeship ranges from 45% to 81%. The highest alcohol consumption among residents was recorded in the following counties: słociński (81%), żarski (76%), wschowski (75%) and nowosolski (74%). When developing the "Municipal Program for the Prevention and Solving of Alcohol Problems and Counteracting Drug Addiction in the City of Zielona Góra for 2021", the recommendations of the State Agency for Solving Alcohol Problems and the guidelines of the National Bureau for Counteracting Drug Addiction were used. The "Municipal Program for the Prevention and Solving of Alcohol-related Problems and Counteracting Drug Addiction for 2021" is a description of planned activities in the field of addiction prevention, and is consistent with the Program for Counteracting Domestic Violence and Protection of Victims of Violence in the city of Zielona Góra. The second program implemented as consistent with the municipal program is the Strategy for Solving Social Problems in Zielona Góra, and the third is the Cooperation Program of the City of Zielona Góra with Non-Governmental Organizations (Municipal Program for…, 2021, pp. 4-5).

There are many preventive programs in the Lubuskie Voivodeship for early detection of diseases and counteracting their development, presented in Table 3 along with the number of people who benefited from them.

Table 4.
Health prevention programs and the number of people who benefited from them

Program	Number of people who benefited from the examination
"Lubuskie inhabitants effectively against cancer"	6200
"Colonoscopy for people working, studying or living in the counties of the Lubuskie Voivodeship: Krosno, Nowa Sól, Zielona Góra, Żagań, Żary"	1800
"Cytology and mammography for women from Lubuskie - support for the prevention of cervical and breast cancer"	2600
"Health policy program - Infertility treatment using in vitro fertilization for residents of the Lubuskie Voivodeship in 2021"	101 procedures

Source: Social Policy Strategy of the Lubuskie Voivodeship for 2021-2030, Management Board of the Lubuskie Voivodeship, Zielona Góra 2021, p. 49.

Data from the Department of Health of the Marshal's Office shows that in the years 2014-2020, many important tasks for the local community were carried out, of which the four programs listed in Table 2 were the most popular: The first of them was the "Lubuskie inhabitants effectively against cancer" program, which supported for residents of the Lubuskie Voivodeship in the detection and prevention of malignant tumours of the colon, cervix and breast. The program also involved supporting the implementation of campaigns publicizing and promoting healthy behaviours aimed at preventing diseases. 6,200 people from the Lubuskie Voivodeship took part in the first program. The second program was "Colonoscopy for people working, studying or living in the counties of the Lubuskie Voivodeship: Krosno, Nowa Sól, Zielona Góra, Żagań, Żary". About 1800 people took advantage of this program and underwent preventive examinations. The third most popular program was the one carried out under the slogan: "Cytology, mammography reaches Lubuskie women - support for the prevention of cervical and breast cancer". The number of women who benefited from this program was 2600. The last popular program was "Health Policy Program - Infertility treatment with in vitro fertilization for residents of the Lubuskie Voivodeship in 2021", the number of procedures performed was 101 (Social Policy Strategy…, 2021, p. 49).

The social economy sector is represented in the voivodeship by several dozen institutions. Social economy is considered an area of residents' activity, which, including economic activity combined with public benefit activities, is an excellent way of social and professional integration for people at risk of social exclusion as a result of unemployment, homelessness or addictions. The most intense increase in the number of Lubuskie social enterprises occurred in 2016-2020. The availability of European Social Fund funds allocated to the activities of two Social Economy Support Centres (OWES) probably contributed to this. These entities had to meet appropriate conditions, including the implementation of projects in the area of combating social exclusion and poverty (es.lubuskie.pl). Already at the end of December 2020, the list of social enterprises whose status was confirmed by OWES was 85 entities. Job creation indicators in social enterprises were also effectively implemented. However, a clear weakness of this sector is the durability of these entities, i.e. their unstable situation on the market and, therefore, the uncertainty of the jobs they offer (Social Policy Strategy…, 2021, p. 53). In order to make it possible to become familiar with the offer of cooperatives, foundations and associations implementing social economy programs, the Lubuskie Social Economy Support Centre has launched a special website under the same name (lowes.lubuskie.org.pl).

Social policy is an important element of the "Regional Operational Program Lubuskie 2020", covering the issues of unemployment, health care, support for people with disabilities and social economy. Based on the information collected on the basis of the "Annual Report on the implementation of the Lubuskie 2020 Regional Operational Program in 2019", it is possible to verify the implementation status of the planned activities based on the amount of funds allocated for financial support of projects and the values of selected indicators at the end of 2019. The first of them is Priority Axis 6. Regional labour market, with the allocation of funds in the amount of EUR 68,348,451 - Thematic objective 8 Promoting sustainable and high-quality employment and supporting employee mobility. The effect of this program was the signing of 152 contracts for the amount of co-financing from EU funds in the amount of EUR 50.71 million (i.e. 74% of the allocation), expenses in the amount of EUR 31.86 million were considered eligible, and support covered 8,364 unemployed people and 4657 working people (Social Policy Strategy…, 2021, p. 54).

However, the in-depth "Socio-economic diagnosis of the Lubuskie Voivodeship" from 2019 showed that one of the biggest problems of Lubuskie communes is the lack of investment in infrastructure serving social purposes. This particularly applies to cultural facilities and centres intended for the development of sports and recreation. The diagnosis indicated a lack of investments in areas that contribute to the quality of human capital in the long run, but are also important in the process of creating the basis for future development (bip.lubuskie.pl).

To sum up, the Lubuskie Voivodeship is struggling with many problems that influence each other and determine its structure in the examined area. A thorough analysis allowed determining the fundamental problems facing the local community. These include the deteriorating demographic situation, which is manifested by depopulation, aging communities and growing migration trends. The demographic dependency ratio indicates a negative trend in each of the analysed communes of the Lubuskie Voivodeship, which was considered a worrying trend because the population decline is characterized by an underestimation of the population decline caused by frequent registration in municipal population records of people who actually changed their place of residence (bip.lubuskie.pl). It should also be noted that unemployed people constitute a group of so-called unused human resources, and economic immigrants have become a relatively new phenomenon on the labour market.

The disturbing changes in the age structure of the population outlined above indicate a constant aging process of society, which is characterized by a decreasing number of young people and a growing number of older people. Taking into account the ongoing processes and their impact on the development of the region, it should be noticed that negative natural growth weakens the population potential and has a negative impact on the demographic structure, and the ongoing aging process of society has a negative impact on it, leading to a decline in the number of people of working age. This affects the structure of enterprises to some extent. Although they have shown an increase in newly registered entities in recent years, their overall potential turns out to be quite weak. The lack of young people engaging in entrepreneurship results in a falling level of competitiveness of entities that have been operating on the market for many years (Social Policy Strategy…, 2021, p. 18).

To maintain the appropriate level of the labour market and the profitability of many enterprises, skilful support for people at risk of social exclusion, such as disabled, addicted or unemployed people, is necessary. Vocational and social rehabilitation of disabled people in appropriate facilities located in the Lubuskie Voivodeship allows them to prepare for an independent and independent life, consistent with their psychomotor capabilities. After successful rehabilitation, it is possible to find appropriate employment outside the facility (Social Policy Strategy…, 2021, p. 30). The number of specialist staff employed in health facilities may be insufficient considering the number of people struggling with various types of problems.

One of the positive initiatives in the Lubuskie Voivodeship is the actively operating social economy sector, represented in 2020 by 85 branches. This should be considered an important element that affects the studied area, which is the labour market and the shaping of the living conditions of the inhabitants of the Lubuskie Voivodeship. Economic activity combined with public benefit activities contributes to initiating and consolidating social and professional integration among people at risk of social exclusion, which is also the case in the studied region, where the number of people unemployed has increased in recent years. This may be related to the results of research presented in the "Socio-economic diagnosis of the Lubuskie Voivodeship" from 2019, where the summary stated: "As the main limitation in the effective acquisition of EU funds, Lubuskie communes primarily indicated the need to provide their own contribution for the implemented projects" [bip.lubuskie.pl]. This allows assuming that the Lubuskie labour market still faces many challenges in order to achieve such living conditions for residents that will enable them to have stable employment and access to health, development and recreation facilities.

3. Conclusions

Due to the dynamic changes on the markets, which are caused, among others, by globalization and internalization of enterprises, it is advisable to continue research in the indicated area. The Lubuskie Voivodeship, without using the available financial tools, will not be able to compete on the labour market with other voivodeships in terms of generated GDP or maintaining a low level of unemployment. This will probably make it impossible to obtain appropriate living conditions and prevent excessive migration to voivodeships associated with strongly impacting urban agglomerations, where the labour market is richer and more stable, constituting a serious argument for demographic changes.

A challenge that will have to be met is the phenomenon of population aging, which is the result of both increasing life expectancy and weakening fertility rates. Demographic processes taking place in recent years in the Lubuskie region are identical to trends national, but also with population changes in Central and Eastern Europe.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

EXPLORING THE IMPACT OF HORIZONTAL COLLECTIVISM ON CREATING SHARED VALUE ACTIONS: A STUDY ON BRAND ATTITUDE, PURCHASE INTENTION, AND SOCIAL CORPORATE ENGAGEMENT

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Purpose: This study aimed to investigate the impact of collectivism and individualism dimensions, both horizontal and vertical, on shared value actions, specifically within the realms of brand attitude, purchase intention, and social corporate engagement.
Design/methodology/approach: An online survey, distributed through an external portal, was employed for data collection with a sample size of 366 participants from the USA. Subsequently, structural equation modeling (SEM) was applied to analyze the gathered data.
Findings: It has been established that horizontal collectivism holds significant importance in the decision-making process regarding participation in Creating Shared Value (CSV) actions and can influence individual behaviors and additional purchase activities.
Research limitations/implications: Given the study's focus on a specific demographic, extending the research to diverse cultural contexts may offer valuable insights into the generalizability of the results.
Practical implications: The identified significance of horizontal collectivism in shaping decision-making processes and influencing behaviors presents practical implications for business experts seeking to enact changes in their enterprises. Recognizing the pivotal role of horizontal collectivism can guide strategic initiatives aimed at fostering shared value actions within organizations. Conversely, the insignificance of horizontal individualism highlights the need for businesses to focus on collective values and collaboration when implementing initiatives related to shared value.
Originality/value: The research problem addressed in this paper is an intriguing topic for discussion in a business context, given the increasing influence of Corporate Social Responsibility (CSR) initiatives and the growing number of companies engaging in environmental and social activities. Consumers are becoming increasingly conscious during the decision-making process, and their consumption choices are becoming more sustainable and environmentally friendly. This trend will inevitably necessitate business decision-makers and producers to conduct new market analyses and, at times, redefine the goals or entire strategies of their companies, both now and in the future.
Keywords: Corporate Social Responsibility (CSR), Creating Shared Value (CSV), Collectivism, Individualism.
Category of the paper: Research paper.

1. Introduction

In the current era, where social and environmental issues are becoming increasingly prevalent and pressing, businesses face the challenge of aligning their business objectives with benefits for society and the natural environment (Camilleri, 2017). In the context of this challenge, there is a growing emphasis on the concept of Creating Shared Value (CSV). While academia, as noted by Ham et al. (2020), has started to closely scrutinize CSV, research in this area is still in its early stages (Yoo, Kim, 2019), therefore an investigation of the customers' perceptions about how well a firm integrates both social and economic dimensions, simultaneously makes meaningful contributions to the CSV literature.

CSV is focused on the identification and development of connections between social progress and economic advancement through the investment in solutions to social and environmental issues. Creating Shared Value has been proposed by Kramer and Porter (2011) as the next phase after Corporate Social Responsibility (CSR). Simultaneously, it ensures the enduring competitiveness of the company while maintaining a balance between economic and social value (Crane et al., 2014).

Creating Shared Value, by design, concerns increasing economic and social value rather than redistributing pre-existing value by companies (Wójcik, 2016). An example illustrating this difference in perspectives is the Fair Trade movement mentioned by Kramer and Porter (2011), aiming to boost the income of impoverished farmers by paying them higher prices for the same crops. However, Fair Trade primarily relies on redistribution rather than enhancing the overall value created. In contrast, the shared value perspective focuses on improving farming techniques, empowering local supplier groups and other institutions, leading to increased farmer productivity, yields, product quality, and sustainable development. This, in turn, augments the revenue and profits, benefiting both the farmers and the companies that purchase from them. The social benefits of providing appropriate products to low-income and disadvantaged consumers can be substantial, while the profits for companies can be significant (Kramer, Porter, 2011). In Koo, Baek, and Kim's (2019) article, CSV consists of three components: economic, social, and personal (self-realization) value. Engaging in societal initiatives is a common goal across all elements, with common economic and personal value involving goal setting and pursuit, while personal and social values encompass solidarity, defending competition, and personalization.

Kramer and Porter (2011) confirm that the most powerful players on the international stage are often able to achieve a competitive advantage by engaging with important communities. Companies that can embrace this new, local approach will be able to create value in partnership with these communities. Key factors that have an impact include: energy consumption and logistics, resource utilization, supply, distribution, employee productivity, as well as location (Li et al., 2022). Creating Shared Value opens up many new needs to address, products to introduce, customers to serve, and ways to configure the value chain. It also focuses companies on achieving the right kind of profits - profits that bring social benefits, rather than diminishing them (Menghwar, Daood, 2021). This goal arises not out of charity but from a deeper understanding of competition and the creation of economic value. This further evolution of the capitalist model recognizes new and better ways to develop products, serve markets, and build productive businesses. To achieve the goals related to shared value, five elements are necessary:

- Common Agenda – the development of a shared vision for change and the approach to its implementation.
- Common Measurement System – establishing a concise list of indicators that will help determine how a company's performance will be measured and reported.
- Mutually Reinforcing Activities.
- Continuous Communication – All stakeholders must engage in frequent and organized communication to build trust and coordinate mutual goals.
- Dedicated Project Backbone Support from one or several independent organizations (Kramer and Pfitzer, 2016).

In this context, the Creating Shared Value approach can help companies change the way they conduct business by building long-term relationships based on trust (Park, 2020). Corporate trust is crucial for maintaining and improving a company's performance because it can motivate and drive the corporation to take actions that contribute to increasing value for all stakeholders (Pfajfar et al., 2022). The CSV approach allows a company to go beyond the traditional concept of Corporate Social Responsibility and focus on creating value for all stakeholders. In this way, the company can build trust by focusing on real social and economic needs while also achieving financial benefits (Lim, Lee, 2022).

People's perception of Creating Shared Value actions has a significant impact on their behaviors and purchasing decisions, simultaneously serving as a crucial aspect shaping contemporary society and business (Ham et al., 2020). Several factors play prominent roles in the perception and subsequent participation in shared value creation activities.

Horizontal and vertical dimensions of individualism and collectivism are integral elements that distinguish dominant cultural orientations, highlighting the importance of individuality versus group harmony (Sivadas, Bruvold, Nelson, 2008). the most significant shift in thinking concerning individualism-collectivism that has occurred since Hofstede's (1984) popularization of the construct in the organizations literature. By viewing the construct as bi-dimensional (individualism and collectivism rather than individualism versus collectivism), the opportunity to explain anomalous behavior has been created. The Horizontal and Vertical Individualism-Collectivism (HVIC) scale was created to assess both horizontal and vertical subtypes of individualism and collectivism. Singelis et al. (1995) identify horizontal and vertical subtypes for both individualism and collectivism. In horizontal cultures, there is an emphasis on equality, where individuals perceive others as having a similar sense of self, often found in homogeneous cultures. Conversely, vertical cultures accept inequality (Triandis, 1995). Therefore, a culture's characteristics can be defined by its endorsement of Horizontal Collectivism (HC), Vertical Collectivism (VC), Horizontal Individualism (HI), and Vertical Individualism (VI) (Chiu, Chia, 2015).

Individuals with individualistic values perceive themselves as independent entities, aligning their behaviors and preferences with personal attitudes, leading to a distinct self-perception and a tendency to follow one's own preferences. Whereas individuals with collectivistic values see themselves as interdependent with others and generally adhere to social norms (Bechtoldt, Choi, Nijstad, 2012). The horizontal and vertical dimensions relate to how these values are manifested in social relationships. Cultures with horizontal dimensions underscore equality and diminish power distance. Within horizontal relationships, structural egalitarianism prevails, with all members embracing interdependence and equal status. Conversely, vertical relationships are structured hierarchically, with members of a culture acknowledging and embracing inequality, assigning importance to social rank or status. In cultures with vertical dimensions, the emphasis lies on hierarchy and a reverence for authority (Boyle, Saklofske, Matthews, 2014). These dimensions differ from the traditional dimension of individualism/collectivism as they provide a more vivid understanding of how cultural values are expressed in different contexts. However, there are individual differences within cultures, and not all individuals within a given culture will share the same values or behaviors (Sivadas, Bruvold, Nelson, 2008).

The division of cultures into individualism and collectivism highlights differences in the approach to respect for individual rights. In individualistic cultures, expressing distinctiveness is crucial, where the primary value is the individual and their immediate family. There is greater freedom in setting goals, and the bonds between group members are looser. These cultures typically show a greater tendency toward nonconformity, focus on oneself, and may exhibit less concern for the well-being of others. In contrast, in collectivistic cultures, the priority is group membership, and decisions are made with the well-being of the entire group in mind rather than the individual (Kim, 1995).

Collectivists, both horizontal and vertical, share a similar approach to values associated with the conservative pole. They emphasize values such as "security" (stability and protection of society, relationships with others, and one's own identity), "adaptation" (restraining socially unacceptable impulses and actions), and "tradition" (respect for cultural, religious customs, and ideas). Horizontal collectivists place greater emphasis on the value of "benevolence" (caring for the well-being of close individuals), while vertical collectivists focus on the value of "power" (control over people and resources) (Czerniawska, 2020).

Individualists, both horizontal and vertical, show similar attachment to values associated with the openness to change pole. They appreciate values such as "self-determination" (independence in thinking and action), "stimulation" (novelty, excitement, challenges), and "hedonism" (pleasure, sensuality). However, they differ in the context of the power dimension. Horizontal individualists assign greater value to "universalism" (tolerance and protection of all people and the environment), while vertical individualists focus on the value of "achievement" (skills consistent with social standards) (Czerniawska, 2020).

Based on aforementioned literature review, it is predicted that horizontal dimensions, as opposed to vertical ones, will have a positive impact on consumer attitudes towards the brand. Therefore, we hypothesized:

H1: Horizontal collectivism positively influences consumer perception of the brand and will be the most significant dimension among all.

H2: Horizontal individualism negatively influences consumer perception of the brand and will be the least significant dimension among all.

H3: Vertical collectivism positively influences consumer perception of the brand, but to a lesser extent than horizontal collectivism.

H4: Vertical individualism negatively influences consumer perception of the brand, but to a lesser extent than horizontal individualism.

These hypotheses suggest that the horizontal dimensions of collectivism and individualism are expected to play a more substantial role in shaping consumer attitudes toward the brand compared to the vertical dimensions. The hypotheses also indicate the expected direction of the influence of each dimension on brand perception.

Hypotheses (H5 to H8) regarding the impact of different dimensions on purchase intentions:

H5: Horizontal collectivism positively influences purchase intentions and will be the most significant dimension among all.

H6: Horizontal individualism negatively influences purchase intentions and will be the least significant dimension among all.

H7: Vertical collectivism positively influences purchase intentions, but to a lesser extent than horizontal collectivism.

H8: Vertical individualism negatively influences purchase intentions, but to a lesser extent than horizontal individualism.

These hypotheses extend the analysis to the impact of the various dimensions on purchase intentions. Similar to the previous set of hypotheses, these hypotheses suggest the expected direction and significance of the influence of each dimension on consumer purchase intentions.

The set of hypotheses (H9 to H12) focuses on how different dimensions of collectivism and individualism influence the perception of a brand's social engagement:

H9: Horizontal collectivism positively influences the perception of a company's social engagement and will be the most significant dimension among all.

H10: Horizontal individualism negatively influences the perception of a company's social engagement and will be the least significant dimension among all.

H11: Vertical collectivism positively influences the perception of a company's social engagement, but to a lesser extent than horizontal collectivism.

H12: Vertical individualism negatively influences the perception of a company's social engagement, but to a lesser extent than horizontal individualism.

These hypotheses explore how different dimensions of individualism and collectivism may impact the way consumers perceive a company's social engagement. The hypotheses indicate the expected direction and significance of the influence of each dimension on the perception of corporate social engagement. A structural model will be used to test the relationships between these factors, and data on the levels of collectivism and individualism among respondents will be collected to assess the significance and direction of the impact of these variables on the perception of CSV actions.

2. Method

In the context mentioned above, the present investigation utilized an online survey, employing a questionnaire distributed through an external portal for participant recruitment. A total of 366 residents from the United States were chosen to take part, and each participant received a modest compensation as acknowledgment for their time and engagement. The empirical material allowed for the analysis of results using the structural equation modeling method. To ensure the reliability of the data, several strategic measures were implemented. Participants were selected based on their positive history of task completions. Strict measures were in place, allowing each participant only one survey submission, enforced by restricting it to one survey per IP address. Moreover, attention-checking questions were incorporated into the survey to assess the level of attention and identify respondents who answered reflexively or in a haphazard manner, allowing for their exclusion from the analysis.

The majority of the study participants were male, making up 207 individuals, accounting for 56.56% of the total respondents. Meanwhile, 43.4% of the respondents were female. The average age of the participants was 36.82 years, with the youngest respondent being 20 years old and the oldest, 76 years old. The standard deviation was 10.92. In terms of income, most respondents fell within the income bracket of $50,000 to $75,999 annually and held a Bachelor's Degree. The last question related to the paper's content was about the average annual income donated to charitable causes. The most frequent response was $500 to $799, followed by less than $500, while the least common responses were $1300 and above (the highest value among the responses).

The first part of the study involves describing a situation, followed by questions presented to the study participants: *Imagine that brand X, which you were not familiar with before, exists in the private sector and conducts a series of activities related to environmental and social responsibility. The company offers a wide range of environmentally friendly products due to their fair production. What's more, a percentage of their sales goes towards various charitable causes, such as supporting children from impoverished households or raising funds for rainforest conservation. Additionally, customers can participate in campaigns organized by* *brand X that go beyond product purchases. These campaigns include self-development workshops, such as webinars on stress management, and environmentally oriented activities, like beach cleanups.*

The first section involved the analysis of general factors influencing brand perception, the creation of shared value, and purchase intention, as presented in Table 1.

Table 1.
Analysis of factors influencing brand perception, social engagement, and purchase intentions.

Item	Statement
Purchase Intention	PI1 - I would like to buy any product sold by this company PI2 - I am willing to purchase product off their website or stationary store PI3 - I will make an effort to search and then buy any product which contributes to values held by this company
Brand Attitude	BA1 - My attitude toward this brand is unappealing/appealing BA2 - My attitude toward this brand is bad/good BA3 - My attitude toward this brand is unpleasant/pleasant BA4 - My attitude toward this brand is unfavorable/favorable
Social Contribution of the Company	SCC1 - The company improves the economic welfare of the community SCC2 - The company fosters local residents' training and development (education) SCC3 - The company helps create a better society SCC4 - The company strives to enhance stable relationship through collaboration with its suppliers

Source: own elaboration based on Youn et al., (2020) and Ham, et al., (2020).

The second section comprised questions based on the content of the article and concurrently on Sivadas' study (2008), focusing on the horizontal and vertical dimensions of individualism and collectivism. This was done to later assess their relationship with Section 1. The content of these questions is presented in Table 2.

Table 2.
Variables related to dimensions of individualism and collectivism.

Item	Statement
Horizontal Individualism	HI1 - I enjoy being unique and different from others in many ways HI2 - I often "do my own thing" HI3 - I am unique individual
Horizontal Collectivism	HC1 - My happiness depends very much on the happiness of those around me HC2 - The well-being of my co-workers is important to me HC3 - If a co-worker gets a prize, I would feel proud HC4 - I feel good when I cooperate with others
Vertical Collectivism	VC1 - I would do what would please my family, even if I detested that activity VC2 - I usually sacrifice my self-interest for the benefit of my group VC3 - Children should feel honored if their parents receive a distinguished award VC4 - I would sacrifice an activity that I enjoy very much if my family did not approve of it
Vertical Individualism	VI1 - I enjoy working in situations involving competition with others VI2 - Competition is the law of nature VI3 - Without competition it is not possible to have a good society

Source: own elaboration based on Sivadas, Bruvold, Nelson, 2008.

To assess the impact of the horizontal and vertical dimensions of collectivism and individualism on the perception of CSV actions, a structural equation modeling (SEM) analysis was conducted. During the study, it was examined whether the application of theoretical constructs was reflected in the research results. It's worth noting that the scenario pertained to questions from section 1, while the remaining two sections and demographic questions related to the consumer's approach rather than a specific situation or company.

3. Results

The constructs detailed in the analysis include PI (Purchase Intention), SCC (Corporate Social Commitment), and BA (Brand Behavior) at the first level of analysis. The correlation between this group of factors and the dimension of collectivism and individualism, namely HC (Horizontal Collectivism), HI (Horizontal Individualism), VC (Vertical Collectivism), and VI (Vertical Individualism), was analyzed. It can be observed that each of these factors has its unique and individual connections between the first and second levels of the model. Factors related to collectivism and individualism are associated with brand behavior. To evaluate which of them are relevant to the research area, a detailed analysis of the data for each factor was conducted.

The Factor Loading coefficient serves to assess how well a given item represents the underlying construct. The P-value indicates the statistical significance of the result, i.e., the likelihood of the test. Cronbach's Alpha regulates the test's reliability and measures the degree of interrelatedness between individual items in a set of questions and how consistently they measure the same construct. Composite Reliability (CR) is a measure used in SEM to assess the internal consistency or reliability of a latent variable with multiple indicators. CR is similar to Cronbach's Alpha but is considered a more appropriate measure of reliability for latent variables with multiple indicators. It evaluates the extent to which the indicators of a latent variable consistently measure the same underlying construct. Higher CR values indicate greater reliability or internal consistency of the composite variable. Average Variance Extracted (AVE) is a measure used in SEM to assess the convergent validity of a latent variable. It quantitatively measures the proportion of variance in the indicators of a latent variable that is captured by the underlying construct. Below is Table 3 presenting the results of the factor analysis, including factor loadings, Cronbach's alpha coefficients, and t-statistic values for each factor.

Table 3.
The results of the factor analysis

Construct	Item	Loading	P-value	Cronbach's α	CR	AVE
PI	PI1	0.768	***	0.815	0.816	0.597
	PI2	0.807	***			
	PI3	0.742	***			
SCC	SCC1	0.781	***	0.835	0.835	0.559
	SCC2	0.73	***			
	SCC3	0.76	***			
	SCC4	0.718	***			
BA	BA1	0.799	***	0.865	0.868	0.623
	BA2	0.827	***			
	BA3	0.739	***			
	BA4	0.786	***			
HI	HI1	0.732	***	0.772	0.772	0.53
	HI2	0.699	***			
	HI3	0.756	***			
HC	HC1	0.69	***	0.809	0.81	0.516
	HC2	0.691	***			
	HC3	0.753	***			
	HC4	0.737	***			
VC	VC1	0.759	***	0.806	0.815	0.528
	VC2	0.775	***			
	VC3	0.611	***			
	VC4	0.733	***			
VI	VI1	0.825	***	0.839	0.839	0.635
	VI2	0.799	***			
	VI3	0.768	***			

Source: own elaboration.

The data in Table 4 allows for an assessment of the strength of the relationship between variables and factors, internal scale consistency, and the statistical significance of the factor analysis results.

Table 4.
Analysis of Covariance

chisq	df	SRMR	RMSEA	AGFI	NFI	CFI	GFI	RFI	IFI	TLI
636.859	254	0.05	0.064	0.959	0.89	0.93	0.97	0.87	0.931	0.917

Source: own elaboration.

The conclusions drawn from the presented factor analysis table indicate several significant observations. The first important conclusion is the high internal consistency of the PI scale (Purchase Intent), confirmed by a Cronbach's alpha coefficient of 0.815. All three items in the PI scale have significant and strong loading factors, confirming their significant contribution to the construction of PI. Overall, the PI scale exhibits a high level of internal consistency (CR = 0.816 > 0.7) and is well internalized (AVE = 0.597 > 0.5).

Similarly, the SCC scale (Corporate Social Commitment) demonstrates high internal consistency, with a Cronbach's alpha coefficient of 0.835 (>0.7). All four items in the SCC scale have significant and strong loading factors. The SCC scale also features a high level of internal consistency (CR = 0.835) and adequate internalization (AVE = 0.559). The remaining scales (BA, HI, HC, VC, VI) also exhibit high internal consistency, with Cronbach's alpha coefficients of 0.865, 0.772, 0.809, 0.806, and 0.839, respectively. All items in these scales have significant and strong loading factors, confirming their significant contributions to the respective constructs. The CR and AVE values for these scales also indicate high internal consistency and adequate internalization.

In summary, the results of the factor analysis confirm that all the tested scales are internally consistent, and the individual items within the scales significantly contribute to their assigned constructs. The results of the analysis indicate a generally good fit of the model to the data, as evidenced by the high values of the AGFI (Adjusted Goodness-of-Fit Index), CFI (Comparative Fit Index), GFI (Goodness-of-Fit Index), and IFI (Incremental Fit Index). Additionally, the low values of the SRMR (Square Root Mean Residual) and RMSEA (Root Mean Square Error of Approximation) emphasize the robustness of the analysis. The ratio of chi-squared to degrees of freedom (df) is also less than 3, meeting the statistical test condition. Therefore, it can be concluded that the model fits the data satisfactorily. As part of the analysis, an assessment was also conducted to evaluate the degree of correlation between observable variables and the significance of the relationships between them. All loadings presented in Table 5 show values exceeding 0.5. Based on this, it can be inferred that there is a high level of mutual correlation between the factors. Furthermore, it can be observed that the HC factor (Horizontal Collectivism) exerts the greatest influence on first-level factors such as purchase intention, social engagement, and brand behaviors.

Table 5.
Degree of Correlation and Significance of Relationships Between Observable Variables

	PI	**SCC**	**BA**	**HI**	**HC**	**VC**	**VI**
PI	1.000						
SCC	0.919	1.000					
BA	0.906	0.956	1.000				
HI	0.767	0.702	0.777	1.000			
HC	0.862	0.821	0.874	0.891	1.000		
VC	0.778	0.778	0.766	0.694	0.832	1.000	
VI	0.604	0.605	0.557	0.597	0.623	0.826	1.000

Source: own elaboration.

Table 6 presents the SEM analysis, encompassing results and conclusions regarding the study, its assumptions, and the verification of structural assumptions.

Table 6.
SEM Analysis

Dependent variable	**Independent variable**	**Beta**	**SE**	**p-value**
BA	HC	0.796	0.5801	**
BA	HI	0.0004	0.3871	NS
BA	VC	0.142	0.3577	NS
BA	VI	-0.065	0.2347	NS
PI	HC	0.788	0.6218	**
PI	HI	-0.036	0.4137	NS

Cont. table 6.

PI	VC	0.102	0.3815	NS
PI	VI	0.046	0.2525	NS
SCC	HC	0.842	0.6081	**
SCC	HI	-0.176	0.4173	NS
SCC	VC	0.125	0.3673	NS
SCC	VI	0.08	0.2447	NS

Source: own elaboration.

4. Discussion

The obtained data confirm the first three hypotheses, revealing a positive relationship, as demonstrated earlier. Specifically, concerning the variable BA (Brand Attitude), a notable positive relationship exists with both HC (Horizontal Collectivism) and VC (Vertical Collectivism). An increase in the values of HC and VC correlates with an escalation in the variable BA. However, the variable VI (Vertical Individualism) does not show a significant impact on the variable BA. For the variable PI (Purchase Intention), both the HC and VC variables have a significant influence on it. An increase in the values of HC and VC is associated with an increase in the variable PI. However, the variable HI does not demonstrate a significant impact on the variable PI. Concerning the variable SCC (Social Corporate Citizenship), the HC variable has a significant positive influence on it. An increase in the values of HC leads to an increase in the variable SCC. The variable HI (Horizontal Individualism) does not show a significant impact on the variable SCC. It is worth noting that the p-values for many variables are significant, indicating the statistical significance of relationships between variables. The beta level is also significantly higher for the HC variable, indicating a strong influence of this factor on the other constructs. Significance at $p<0.01$ is denoted in the table by the symbol ** and occurs only for the HC variable, indicating a good fit of this factor to the other variables.

Unfortunately, the empirical data obtained do not allow for a clear determination of the influence of the remaining dimensions on the perception of CSV actions. In contrast, Cui, Zeng, and Jin (2022) found that vertical individualism had no significant impact on socioeconomic-oriented consumption. Furthermore, their research revealed that horizontal individualism, horizontal collectivism, and vertical collectivism positively influenced both eco-friendly and socioeconomic-oriented consumption. Similarly, the results from Moon, Travaglino, and Uskul's (2018) study also indicated no difference across two cultural settings in the association between Social Value Orientation and the vertical dimensions of individualism and collectivism.

Based on Ur Rahman et al.'s (2023) study, it contributes by providing new theoretical and managerial insights into understanding culturally relevant sustainable consumption motives. It aims to establish appropriate strategies for promoting sustainable consumption in cross-cultural contexts by highlighting the significance of incorporating the vertical-horizontal dimension into cross-cultural analyses based on individualism-collectivism. Our discovery that Horizontal Collectivism emerges as the most influential factor on first-level constructs like purchase intention, social engagement, and brand behaviors is in alignment with Booysen, Guvuriro, and Campher (2021), where their study finds only horizontal collectivism to be associated with greater preferences for altruism through the social discounting task. Further research is required to elucidate the causal mechanisms through CSV decisions.

Acknowledging the study's limitations, it is crucial to highlight that it was conducted exclusively on a subset of the population — residents of the United States. Different nationalities, national cultures, or differently formulated assessment statements would inevitably influence responses, potentially altering the analysis. The conclusions drawn from this study can offer valuable insights for decision-makers across businesses of any size and within various industries looking to implement the concept of creating shared value. These insights are particularly relevant when formulating short- and long-term goals and making strategic decisions related to product sales in both physical stores and e-commerce. Managers should recognize the potential necessity of educating customers about their company's CSV strategy. This is because unintended adverse consequences may arise regarding the impact of their company's economic performance on customers' perception of their brand. Hence, the significance lies not only in implementing a CSV strategy but also in effectively communicating and educating the public about it.

5. Conclusion

Collectivism, particularly its vertical dimension involving the acceptance of hierarchy while maintaining a sense of group belonging, significantly influences engagement in broadly defined social activities. It can be inferred that individuals actively participate in shared value creation to enhance their social status and ascend within the hierarchy. Simultaneously, there is a desire to attain intangible benefits and recognition from leaders, including opinions and groups. With the continuous evolution of the CSV concept, shifting consumption trends, and the growing interest of businesses in sustainable practices, alongside dynamic environmental and societal trends, ongoing research becomes imperative. In future research, exploring the evolving dynamics of collectivism and individualism, while also considering other psychological factors such as altruism or egoism, should be a priority. Examining different scenarios, including alterations to the company description, reducing the number of questions for increased participant engagement, and enhancing precision in their formulation, should be considered. The significance of diversifying respondents from multiple countries cannot be overstated, given the varied cultural approaches to this topic.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN THE KUJAWSKO-POMORSKIE VOIVODESHIP FROM 2000 TO 2022: AN EVALUATION BASED ON EMPIRICAL RESEARCH

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Purpose: The aim of this article is to present the determinants of choosing the Kujawsko-Pomorskie voivodeship for FDI capital investments, their hierarchy of importance and the changes in this regard over the past two decades.
Design/methodology/approach: This article presents the results of four original research projects, resulting, *inter alia*, in identifying determinants for choosing the Kujawsko-Pomorskie voivodeship as a capital investment destination in the form of FDI. The first was conducted in 2003–2004, followed by two in 2011–2012 and 2014–2016 and the last in 2022. The same survey methodology was used in each project with an original survey questionnaire.
Findings: The results of the studies indicated that the greatest advantage of the Kujawsko-Pomorskie voivodeship is its geographical location. In all four studies, the determinant 'qualifications of the workforce' ranked high. Determinants of the 'efficiency' subgroup belonging to the 'economic' group of factors were also important. This is mainly related to prices in the property market. The results of the studies also indicated that the determinants related to business conditions created by local authorities and the local community show increasing importance.
Practical implications: The results of the presented studies could be used by local authorities in the creation of tools to support the development of entrepreneurship. The development of this area is a basic condition for the realisation of the expectations of local communities in the material and social sphere.
Originality/value: The article presents the results of studies conducted using the same methodology in four sub-periods during the 20-year period. The value of originality is, in particular, the identification of changes over time in the main FDI determinants in the Kujawsko-Pomorskie voivodeship.
Keywords: foreign direct investment (FDI), FDI determinants, Kujawsko-Pomorskie voivodeship.
Category of the paper: Research paper.

1. Introduction

With the onset of the 1990s, Central and Eastern Europe began to emerge as an attractive destination for foreign direct investment (FDI). Among the region's countries, Poland stands out as the dominant leader in absorbing capital. FDI liabilities of USD 269.8 billion ranked Poland 26th globally. In comparison, neighbouring countries reported the following liabilities: Czech Republic USD 202.7 billion, Hungary USD 104.3 billion and Slovakia USD 57.4 billion. The strong interest of foreign direct investors in Poland is evident, with the country ranking 14th globally in FDI inflow value in 2022, historically 13th the year before (UNCTAD, 2023, p. 8).

Foreign investor activity primarily focuses on Poland's most developed voivodeships (provinces). According to Statistics Poland (GUS) data from the end of 2021, nearly 40% of companies with foreign capital in Poland registered their activities in the Mazowieckie voivodeship (9458 entities)[1]. Also of great interest to foreign investors were the Dolnośląskie voivodeships (9.1% of the total number of companies with foreign capital in Poland), Wielkopolskie (8.9%), Śląskie (8.5%), Małopolskie (7.7%), followed by Pomorskie (4.9%), Zachodniopomorskie (4.3%), and Łódzkie (4.0%) voivodeships. In total, as much as 91.6% of the foreign capital that flowed into Poland in this form was located in entities registered in these eight voivodeships. Other voivodeships, mainly in the east of the country, have had a minor share of this structure. The Kujawsko-Pomorskie voivodeship was ranked 12th in terms of the number of entities with foreign capital share (492 enterprises) and 11th in terms of the value of capital absorbed in this form (nearly PLN 3.5 billion) (figure 1).

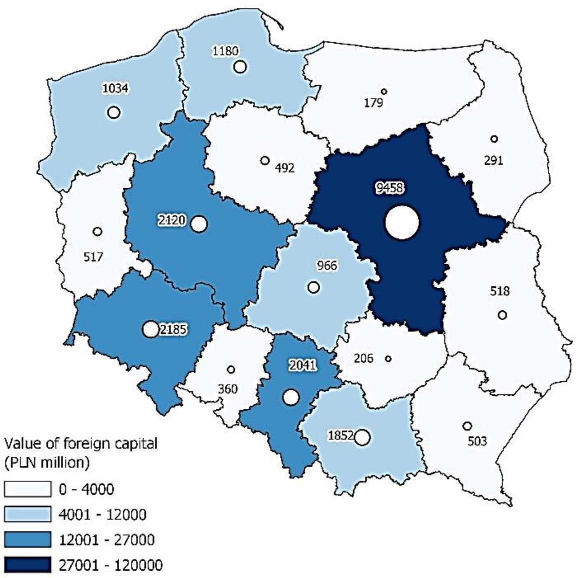

Figure 1. Number of enterprises with foreign capital share and its intensity in Poland by voivodeship (as at the end of 2021).

Source: own work based on Local Data Bank of Statistics, Poland (GUS).

[1] It is worth noting that the dominance of the Mazowieckie voivodeship is largely linked to the choice of Warsaw as the seat of companies with foreign capital (management offices). It is not uncommon for these companies to operate outside the capital city, including outside the Mazowieckie voivodeship.

Disparities in the absorption of foreign capital in Poland remain very high. For voivodeships with lower investor interest, competing for foreign capital inflow is particularly challenging. Therefore, these voivodeships need to recognise the determinants of FDI investment choice. Using instruments developed based on identified foreign investor expectations is essential for effective competition.

The literature lists a wide range of factors influencing decisions to undertake FDI. In addition to those directly related to the expanding company (such as size, sector of activity, development strategy and management motivations), the location factors of the country/region play an important role. Countries/regions that can offer foreign investors favourable business conditions, with the advantages these investors seek, become attractive investment locations (Jaworek et al., 2016, p. 122; Jaworek et al., 2022, p. 39).

According to J.H. Dunning, locational determinants of FDI can be divided into three groups (Dunning, 2006; UNCTAD, 1998): institutional-legal, economic and related to the business conditions created by local authorities and the local community. The first group includes tax and trade policies, market protection, economic, political and social stability, etc. Depending on the motives driving the investor, Dunning divides economic determinants into market-oriented, resource-oriented (e.g., raw materials, skilled or unskilled workforce), efficiency-oriented (related to the costs of the business) and strategic assets (related to the infrastructure of the host country). The third group includes factors such as investment promotion, investment incentives and various forms of administrative support and facilities, attitudes of local communities, etc. (Dunning, 2006; UNCTAD, 1998; Jaworek, Kuczmarska, Kuzel, 2017).

The issue of FDI determinants in Poland has attracted considerable interest from national and foreign research centres, as confirmed by studies conducted in this area since 1990. Qualitative studies, which base their conclusions on the identification of FDI location determinants obtained from investors, are particularly significant. This is because their results reveal actual locational advantages – factors that genuinely influenced location decisions. In both Poland and internationally, there is significantly less research of this kind compared to quantitative methods (econometric models). This is due to the substantial difficulty in collecting empirical material and the growing reluctance of entrepreneurs to participate in research. Consequently, a research gap is increasingly apparent in qualitative research. Studies from research centres (Housh, 1997; Schonemann et al., 1997; Witkowska, 1998; Jaworek, 1999, 2006; Pissula, 1997; Karaszewski, 2001, 2004; Niziołek, 2004; Stawicka, 2007; Gorynia et al., 2007; Jaworek, Karaszewski, 2008; Rożański, 2010; Świerkocki, 2011; Aleksandruk, Forte, 2016) as well as institutions (PAIH, 2017; PAIiIZ, 2016, 2000, 2003, 2005; PriceWaterhouseCoopers, 2002; Rodl&Partner, 2005; Polish-German Chamber of Industry and Commerce 2009, 2012, 2013, 2015, 2016, 2017; EY, 2017) have shown that the primary determinants for choosing Poland as a capital investment destination were economic factors, with market and resource considerations being crucial. However, a noticeable shift occurred regarding the latter, moving from the dominance of cost advantages toward qualitative characteristics such as qualifications and employee skills (Jaworek, Karaszewski, 2018).

Research on determinants was conducted in individual Polish regions (Table 1). Karaszewski and Jaworek (2018, p. 45) suggest that various factors stimulate choices at the country and regional levels within a specific country. At the regional level, resource and efficiency factors are more significant due to the localised nature of resources and production factor costs, while access to the Polish market is independent of the entity's location.

Table 1.
Research on determinants of foreign direct investment in selected Polish voivodeships

Voivodeship	Author/publication year
Kujawsko-Pomorskie	Karaszewski, 2001; Czaplewski et al., 2005; Szałucka, Szóstek, 2012; Jaworek et al., 2016, 2023
Łódzkie	Różański, 2010; Kłysik-Uryszek, 2010; Świerkocki, 2011; Dorożyński, Urbaniak, 2012; Starzyńska, 2012; Różański et al., 2015; Buczkowski, Kuna-Marszałek, 2015
Wielkopolskie	Wojtasiewicz, 2006; Pawlak et al., 2015
Warmińsko-Mazurskie	Kisiel et al., 2015
Zachodniopomorskie	Woźniak-Miszewska, 2011;
Dolnośląskie	Brezdeń, 2006
Lubuskie	Byczkowska, Kuciński, 2019

Źródło: own elaboration.

The aim of this article is to present the determinants of choosing the Kujawsko-Pomorskie voivodeship for FDI capital investments, their hierarchy of importance and the changes in this regard over the past two decades. The research direction to achieve this objective was guided by the following hypotheses:

H1: Among the determinants of FDI in the Kujawsko-Pomorskie voivodeship, economic cost-efficiency factors invariably hold a high position in the hierarchy of importance.

H2: Over the study period, the significance of determinants for choosing the Kujawsko-Pomorskie voivodeship as an FDI location changed in directions related to the qualitative characteristics of considered resources and measures to foster entrepreneurship.

2. Methodology

This article presents the results of four original research projects, resulting, *inter alia*, in identifying determinants for choosing the Kujawsko-Pomorskie voivodeship as a capital investment destination in the form of FDI. The first was conducted in 2003-2004 (Karaszewski, 2005), followed by two in 2011-2012 (Karaszewski, 2012) and 2014-2016 (Karaszewski, 2016) and the last in 2022 (Jaworek et al., 2023).

The same survey methodology was used in each project, with only the research procedure changing. A postal survey was employed for the first three projects. Following the deadlines indicated in the cover letters with attached survey questionnaires, requests to participate were reiterated by telephone, and questionnaires were resent via email. For the last project, a link to the electronic survey questionnaire was emailed to the management boards to minimise respondent workload and avoid postage costs for completed questionnaires. Additionally, several phone calls were made, requesting questionnaire completion, and the survey tool link was reiterated multiple times in this project.

In each project, the survey encompassed all companies with foreign capital registered by Statistics Poland in the year of the survey's commencement, operating in the Kujawsko-Pomorskie voivodeship. Unfortunately, despite strenuous efforts to obtain information (return of completed survey questionnaires), the number of participating entities (Table 2) did not allow for generalising the results to the entire investor community. However, the results are informative and insightful. Furthermore, they can be considered closely aligned with the actual state with high probability.

Table 2.
Number of entities surveyed and response level

No.	Year of survey	Number of entities	Response level
1	2003-2004	70	10,6%
2	2011-2012	54	5,4%
3	2014-2016	76	15,8%
4	2022	56	11%

Source: own elaboration based on the research results.

The section on the determinants of choosing the Kujawsko-Pomorskie voivodeship for FDIs not only addresses their identification but also their recognition in the hierarchy of importance. Location decisions typically involve considering various factors that combine uniquely, each with distinct meaning and significance. To depict the results of all the studies, so-called importance indices (W) were used after considering the positioning of each of the identified determinants in a hierarchy of importance. The index was calculated using to the following formula[2]:

$$W = \frac{\sum_{i=1}^{k} n_i w_i}{k \cdot N} \tag{1}$$

where:
i – rating index;
n_i – number of indications of a given factor at the i-th position;
k – maximum rating on a scale from 1 to k (indicating the order of factors meant assigning them ratings in reverse order);
N – number of respondents who answered the question;
w_i – rating corresponding to the position of i factor.

[2] The employed importance index corresponds to the solution proposed by W. Karaszewski and S. Sudol (1997, pp. 17-18).

3. Results

As indicated earlier, the determinants for choosing a country as an FDI destination differ from those for selecting a specific region within the country. This distinction is affirmed by the study's results discussed in this paper. When deciding on a country, determinants from the ‘institutional-legal’ group are often decisive and play a crucial role. However, these are generally common to the entire area and are therefore not pertinent in choosing a specific region (voivodeship). Despite this, there are shared determinants between the choice of a country and a region. This is substantiated by the study, where respondents identified determinants from the "economic" group as influential in investing in the Kujawsko-Pomorskie voivodeship. The determinants from the ‘economic’ group, in relation to the country, however, ascribed less importance to market factors.

The results of the studies indicate that the greatest advantage of the Kujawsko-Pomorskie voivodeship is its geographical location (second place among the determinants of choosing the voivodeship in the first two studies and first in the last two). In all four studies, the determinant 'qualifications of the workforce' ranked high (first in the first two studies and second in the last). The 2022 study indicated a high promotion of the determinant 'transport infrastructure' – from 7th in earlier studies to 2nd in 2022. This is undoubtedly the result of considerable progress in implementing investment projects in the construction and modernisation of the road network in the voivodeship over the past 10 years.

The results of the studies indicated the high importance of the determinants of the 'efficiency' subgroup belonging to the 'economic' group of factors. This mainly relates to prices in the property market. It is interesting to note that high placement of real property prices and rental prices was identified in each of the four studies. Thus, this result seems to confirm the accuracy of the H_1 hypothesis.

The ranking of unemployment among the determinants for choosing the Kujawsko-Pomorskie voivodeship as a location for FDI, still in a high 5th position, underscores the significance of workforce accessibility. Worth noting is that the Kujawsko-Pomorskie voivodeship maintains a higher unemployment level compared to the national average (7.4% in 2022) (Local Data Bank of GUS, 2023). While the disparity in the registered unemployment rate between the Kujawsko-Pomorskie voivodeship and the national rate is gradually decreasing, it remained at 2.2 percentage points in 2022.

It is interesting that determinants located in the third group (related to business conditions created by local authorities and the local community) show increasing importance. In 2022, the business environment was highly ranked by respondents, placing 4th among the determinants for choosing the Kujawsko-Pomorskie voivodeship for FDI. The author's observations confirm the growing involvement of organisations established in the voivodeship that support businesses according to their company constitution (investor service centres, business support centres, etc.). This year, the attitude of the local authority towards the investor was ranked 7th, and the activity of the local authority to help investors was ranked 8th (up four places from the previous study). The results indicate that the voivodeship authorities are becoming increasingly aware of the need to develop entrepreneurship and are taking visible action in this direction. Thus, considering the above-mentioned result of the placement among the determinants of the choice of the voivodeship of the qualifications of the workforce, it can be assumed that the study has provided the rationale to acknowledge the accuracy of the H_2 hypothesis.

The lower-than-expected interest of investors in the Kujawsko-Pomorskie voivodeship as a place to locate their capital in the form of FDI can be explained by their poorer perception of the potential of the local industry (12th place among the determinants of their choice), access to research and development centres (14th place), market absorption (16th place) and access to natural resources (17th place) (Table 3).

Table 3.
Determinants of the choice of the Kujawsko-Pomorskie voivodeship as a location for FDI in the opinion of enterprises with foreign capital/foreign investors

No.	Determinants	Study							
		2022		2014/2016		2011/2012		2022	
		W	Poz.	*W*	*W*	*W*	Poz.	*W*	Poz.
1	geographical location	0,71	1	0,57	1	0,45	2	0,50	2
2	qualifications of the workforce	0,64	2	0,43	3	0,564	1	0,56	1
3	state of transport infrastructure	0,64	2	0,28	7	0,15	7	0,21	7
4	real property prices	0,62	3	0,43	2	0,38	3	0,35	4
5	rental prices, leases	0,62	3	0,41	4	0,29	5	0,43	3
6	business environment	0,57	4	0,25	8	0,31	4	0,25	6
7	unemployment rate	0,56	5	0,30	6	-	-	-	-
8	attitude of the local authorities to the investor	0,55	6	0,21	9	0,11	8	0,17	8
9	the activity of the local authority in assisting investors	0,53	7	0,19	11	-	-	-	-
10	the attitude of the local community towards the investor	0,49	8	0,21	10	0,11	8	0,17	8
11	regional industry potential	0,49	9	0,18	13	0,09	9	0,16	9
12	local tax incentives	0,47	10	0,19	12	0,11	8	-	-
13	access to research centres	0,46	11	0,14	19	0,06	11	-	-
14	quality and efficiency of service in offices	0,45	12	0,16	17	0,04	12	-	-
15	proximity to a key cooperator	0,45	12	0,33	5	0,27	6	0,30	5
16	state of the natural environment	0,43	13	0,16	16	0,09	9	-	-
17	state of the rule of law	0,41	14						
18	tourist attractiveness	0,39	15	0,14	18	0,09	9	-	-
19	market absorption	0,38	16					0,17	8
20	access to natural resources	0,34	17	0,13	20	-	-	-	-

Source: own elaboration based on the research results.

4. Discussion

As can be seen from the research results presented above, one of the most important determinants of FDI in the Kujawsko-Pomorskie region was its geographical location. This is confirmed by the results of the study by Chidlow et al. (2009), according to which the only area of Poland – the north-eastern region (including the Kujawsko-Pomorskie voivodeship) – was the preferred location for FDI inflows, taking into account geographical conditions favourable for physical distribution (i.e., geographical distance). An important determinant for foreign investors who invested capital in the Kujawsko-Pomorskie voivodeship was the condition of the transport infrastructure. Good-quality local infrastructure, including the quality and accessibility of roads and motorways, was also identified for the region in Chidlow et al.'s study (2009).

Among the most crucial determinants of FDI in the Kujawsko-Pomorskie voivodeship is also the qualifications of the workforce. This factor was also identified as one of the most important determinants by US investors who have invested in Poland. Human capital, as a statistically significant and important determinant of FDI inflows to developing countries, is also highlighted in the research by Noorbakhsh et al. (2001).

A large role in the inflow of FDI to the Kujawsko-Pomorskie voivodeship is played, not only by the qualifications of the labour force but also by their high availability as measured by the unemployment rate. This is confirmed by the results of studies, both at the regional and national level (Siemiątkowski, 2005; Wyrwa, 2019; Wyrwa, 2020). However, it should be noted that there is no consensus in the literature on the direction of the effect of unemployment on the scale of FDI inflows (Cieślik, 2005, 2007, 2013; Nazarczuk, Krajewska, 2018a; Dziemianowicz et al., 2019). Labour availability was not a statistically significant determinant of foreign direct investment in a study by D. Wawrzyniak (2017). Within the framework of economic factors, factors related to real estate market prices are significant determinants of FDI in the voivodeship. Similar comments were expressed by investors in a survey conducted by W. Karaszewski at the end of the last century (Karaszewski, 2001). Real estate market prices were also important for investors investing capital in the Warmińsko-Mazurskie voivodeship (Kisiel et al., 2015;), the Łódzkie voivodeship (Różański et al., 2015; Buczkowski, Kuna-Marszałek, 2015) or the Zachodniopomorskie voivodeship (Woźniak-Miszewska, 2011). They turned out to be much less important in the case of the Wielkopolskie voivodeship (Pawlak et al., 2015).

In addition to the unquestionably high importance of economic factors in investment decisions in FDI locations, factors related to business conditions created by local authorities and the local community are becoming increasingly important. This is confirmed by the results of the presented study, as well as studies from other research (e.g. Dorożyński, Urbaniak, 2011; Żelazko, Senderowska, 2013).

The above conclusions are confirmed by the results of studies by other authors on the spatial distribution of foreign direct investment in Poland. These indicate that foreign investors primarily locate their capital in urbanised areas with good transport infrastructure and adequate labour resources (Dziemianowicz et al., 2019; Nazarczuk, Krajewska, 2018a, 2018b). Cost factors are also important for many investors, often influencing the choice of the location of their investments outside the Mazowieckie voivodeship (mainly outside the capital city) (Dziemianowicz et al., 2019; Chidlow et al., 2009).

5. Summary

The presented results of cyclical research into FDI inflow to the Kujawsko-Pomorskie voivodeship indicate differences in the determinants of foreign investors' choice of this region for their capital investment over time. Similar changes have been reported for the country in studies conducted by various research centres.

The effectiveness of measures to attract foreign capital requires recognising the motives for choosing a specific area for investment. This recognition guides the selection of tools to encourage foreign investors to choose a country or region for their capital investment. It should be noted that such studies reveal a past state, but the results, especially the identification of changes in determinants, offer valuable insights into future investor expectations.

The determinant of the choice of the Kujawsko-Pomorskie voivodeship – its location – will remain the same throughout the study period. It can only be used in promotion as a voivodeship asset.

The research presented in this paper clearly indicates that one of the most important determinants for choosing a voivodeship as an FDI location is the situation in the local labour market, especially the availability of appropriately qualified staff. Hence, projects related to education profiling, considering not only current but future employer needs, are crucial.

The conducted research highlights the significance of the transport infrastructure and justifies continuous efforts for improvement. The findings affirm the necessity for local authorities to create the most favourable investment climate, achieved through supporting business institutions, facilitating activities and enhancing service quality and efficiency in offices.

The statistical characteristics shown in the study illustrate the involvement of foreign capital in individual Polish voivodeships, confirming a strong causal relationship between the inflow of foreign capital and the entrepreneurial development of voivodeships. This creates a feedback loop where increased foreign capital fosters local entrepreneurship, and high entrepreneurial development attracts foreign investors. Expectantly, with the economic development of the Kujawsko-Pomorskie voivodeship, the inflow of foreign capital will intensify, leading to expected socio-economic development.

Acknowledgements

The authors of the study would like to thank the companies that took part in the survey and shared their valuable comments.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

REAL ESTATE AS A FACTOR OF INVESTMENT ATTRACTIVENESS OF POLISH VOIVODESHIPS

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Purpose: The purpose of the article is to identify the potential investment attractiveness of Poland's voivodeships in the context of the real estate market, and to compare this attractiveness with the actual attractiveness, i.e. with the opinions of enterprises regarding the determinants of making an investment in a particular location.
Design/methodology/approach: The measurement of the potential investment attractiveness of Poland's voivodeships in the context of the real estate market was made on the basis of secondary data derived from reports of the Central Statistical Office, the Bank of Local Data and the Polish Investment and Trade Agency. The identification of investment attractiveness was made on the basis of the numerical values of the synthetic index. Thus, four classes of voivodeships (A, B, C, D) were distinguished. The study of actual investment attractiveness was a primary survey and was conducted in two stages in the second half of 2022. The survey used proprietary research tools. To the first – expert survey, enterprises operating in the Kuyavian-Pomeranian region and entities representing the business environment were invited. In turn, the second stage of the research procedure covered the full set of enterprises with foreign capital, based in the voivodeship.
Findings: The highest level of potential investment attractiveness in the context of the real estate market (class A) is characterized by 8 Polish voivodeships: łódzkie, lubelskie, kujawsko-pomorskie, opolskie, wielkopolskie, śląskie, dolnośląskie and podkarpackie. A study of real investment attractiveness conducted among companies that have placed capital in Kujawsko-Pomorskie Voivodeship confirmed the importance of location factors related to the real estate market. In the ranking of factors influencing investment attractiveness, the described characteristics of the real estate market received high marks.
Research limitations/implications: Due to the variability over time of the determinants of business location choice, studies to identify them should be conducted successively. It should also be noted that due to the variability of assessments of investment attractiveness determined by the specifics of businesses, it is reasonable to take into account its types in future studies. A serious problem is the limitations in access to data, as well as the growing reluctance of entrepreneurs to participate in surveys.

http://dx.doi.org/10.29119/1641-3466.2024.192.25

Practical implications: The results of the study have practical applications in decision-making processes regarding the choice of business location, especially in cases where these choices are driven by resource and cost determinants. They can also be used by institutions working for the socio-economic development of regions to encourage investors to choose their areas as places to locate capital.
Originality/value: Although the topic of investment attractiveness has been addressed frequently in the available literature, the pillar of attractiveness that is the real estate market has not been considered comprehensively. In addition, the article presents the unique results of a study on identifying the importance of real estate market-related determinants that led foreign investors to choose the Kuyavian-Pomeranian region.
Keywords: investment attractiveness, foreign direct investment, real estate market.
Category of the paper: Research paper.

1. Introduction

In the majority of countries and regions around the world the aim is to stimulate the engagement of capital resources within their locality, thus driving anticipated economic intensification. The state and structure of these resources are fundamental in determining socio-economic development and, as a result, enhancing the living conditions of local populations. In the long term, nearly all key areas underpinning this enhancement are a consequence of the entrepreneurial activity occurring within a specific time and place. This informs the proactive efforts of countries and regions to promote themselves as suitable areas for conducting economic activities. For years, competition has been rising in the race for capital and investors, with the participation of not only entire countries but also their regional components. The source of the capital, be it domestic or foreign, is of little consequence. The issue boils down to the supply of capital and, subsequently, the development of entrepreneurship. Countries experiencing capital deficits and simultaneously lacking internal savings have a particular interest in attracting foreign capital. This is especially applicable to developing countries. They are frequently faced with the need for continuous improvement of location values determining investment attractiveness, understood as a set of factors considered in decisions about the place of conducting economic activity. The concept of location attractiveness in terms of business development is analysed from two distinct perspectives:

1. The country (region) assessing the values of its area for potential investors.
2. The enterprise assessing the values of possible locations for conducting (developing) economic activity.

Potential investment attractiveness is identified through the prism of values (characteristics) of specific locations (country, region) for business in a global context, based on the analysis of the characteristics of a specific location (country, region) conducted using statistical characteristics (macroeconomic indicators). This takes into account the so-called pillars of attractiveness, which are relatively homogeneous sets of its factors. It is relatively widely described both in foreign literature on the subject (e.g. Rodionov, 2021; Grishina, Myakshin, 2021; Gushchenskaya et al., 2020; Kozlov et al., 2018; Vartsaba, Leshuk, 2017; Davydenko et al. 2018; Kireeva, Galiakhmetov, 2015; Kosinova et al., 2014; Nikolova, Platnikova, 2013) and in studies on Poland (Hildebrand et al., 2005; Godlewska-Majkowska, 2008, 2009, 2013; Marona et al. 2012; Nowicki et al., 2014; Marchewka, 2021; Godlewska-Majkowska, Komor, 2021). Although the topic of investment attractiveness is often discussed in the literature using statistical data, identifying potential attractiveness, the property market as a pillar of attractiveness has not been comprehensively considered. The scope of the analysis, the results of which are presented in this study, fills this gap.

The picture of the actual investment attractiveness of the country (region), form the premises for the location decision. Hence, the actual investment attractiveness is assessed on the basis of investors' opinions/appraisals. It should be noted that studies on identifying the determinants that lead investors to choose where to locate investments are rare (e.g. Wilson, 1990; Tatoglu, Glaise, 1998; Bitzenis, 2007; Gorynia et al., 2015; Jaworek et al., 2018). This is understandable, as it is more costly and time-consuming to obtain data at the enterprise level. In addition, there is an observed aversion on the part of entities to share information that can be considered strategic for businesses. There is also relatively little research on the undertaking of investments within a region on a national scale. Among the few are studies whose purpose was to identify the determinants of undertaking investments in particular regions of Poland (Różanski, 2010; Dorozinski, Urbaniak, 2012; Starzyńska, 2012, p. 182).

The issue of determinants of business location has found a particularly important place in the theoretical explanations of foreign direct investment (FDI). These point out that numerous factors influence the choice of country/region for the location of FDI (Athukorala, 2009, pp. 365-408; Mottaleb, Kalirajan, 2010, p. 2).

The purpose of the article is to identify the potential investment attractiveness of Poland's voivodeships in the context of the real estate market, and to compare this attractiveness with the actual attractiveness, i.e. with the opinions of enterprises regarding the determinants of making an investment in a particular location.

2. Methods

There is a distinction between the potential and real investment attractiveness of a country (region). The former considers factors that could potentially be weighed in the selection of location. The latter is understood as stemming from specific rationales for picking the location of an investment and the retrospective appraisal by investors, incorporating also factors that were not previously considered. Potential attractiveness is created by secondary data and information, while actual attractiveness is based on primary information.

Investment attractiveness can be identified within three groups of locational factors[1]. The first group includes institutional and legal factors, comprising tax and trade policies or legal norms (e.g. legislation on the purchase of real estate by foreigners). These are essentially the same, regardless of which region of the country an investor is considering for making an investment. The subsequent group comprises economic determinants, which can be subdivided into resource, market, efficiency, and strategic asset-oriented. This group of factors varies, sometimes significantly within a country. The final group includes factors facilitating economic activity, which encompass investment promotion, investment incentives, and social amenities. These factors are within the control of the host countries and regions (Dunning, 2006, p. 206). Within each of these groups one can find factors related to the real estate market.

In terms of the real estate market, the potential investment attractiveness of individual Polish voivodeships was evaluated taking into account five characteristics henceforth called factors (Table 1). Statistical data – sourced predominantly from the Local Data Bank of the Statistics Poland, as well as provided by the Polish Investment and Trade Agency – were utilised.

The choice of variables was determined by the availability of data. Unfortunately, many of the real estate market characteristics presented in numerous reports refer to the largest Polish agglomerations. The database presenting variables for all provinces is limited.

Each of the characteristics was standardised based on the following formulae:

$$F'_{ij} = \frac{F_{ij} - F_{minj}}{F_{maxj} - F_{minj}} \cdot 100 \tag{1}$$

for a stimulant, and

$$F'_{ij} = \frac{F_{maxj} - F_{ij}}{F_{maxj} - F_{minj}} \cdot 100 \tag{2}$$

for a destimulant.

The value of the potential investment attractiveness of a voivodeship in terms of the property market was calculated as a weighted average of the values of individual factors and their allocated weights. Weights were adopted based on an expert survey, conducted in May 2023, of representatives from the academic world studying investment attractiveness, as well as from business and quasi-business environments. According to J. Lutynski's (1968) nomenclature of research techniques, a standardized technique was used, in which the research tool was a survey questionnaire. The results of the survey revealed that the variables under consideration carried different levels of importance. The highest-ranking factor was "availability of investment areas", followed by "average price of land intended for investment construction". Subsequent in order were the "share of the area covered by valid local spatial development plans", "share of legally protected lands in the total land area", and "median price

[1] In breaking down the factors of investment attractiveness, the taxonomy proposed by J.H. Dunning (2006) was adopted. The author proposed it by identifying the determinants of location choice for foreign direct investment.

of residential premises sold in market transactions". This order was taken into account in assigning weights to individual determinants. The division of voivodeships into classes of property market investment attractiveness (A, B, C, D) was made based on a natural division according to Jenks' method. The set of location factors related to the property market used in this study is presented in Table 1.

Table 1.
Investment Attractiveness Factors in the Context of the Real Estate Market

Pos.	Factor Group/Factor Type	Designation	Character	Weight
Resource factor ($F_{res.}$)				
1	Availability of investment areas (surface area)	$F_{res.}1$	Stimulant	0.30
2	Percentage of area covered by current local spatial development plans (%)	$F_{res.}2$	Stimulant	0.20
3	Percentage of legally protected areas in total surface area (%)	$F_{res.}3$	Destimulant	0.15
Efficiency determinants ($F_{eff.}$)				
4	Average price of real estate designated for development (for investment purposes) (PLN/m2)	$F_{eff.}1$	Destimulant	0.25
5	Median prices of residential properties sold in market transactions (PLN/m2)	$F_{eff.}2$	Destimulant	0.10

Source: own study.

Actual investment attractiveness was evaluated through the lens of the already discussed real estate market characteristics, using the results of two studies: an expert (panel) study and a survey among enterprises with foreign capital participation. These two studies were conducted in 2022[2]. Participants in the expert study were representatives of enterprises diversified in terms of capital ownership (exclusively with Polish capital and with foreign capital participation), operating in the Kujawsko-Pomorskie Voivodeship. Fifty entities recognised as important for the development of the voivodeship were invited to the study, including: the largest companies in the voivodeship according to the Lista 2000 Rzeczpospolita (2020 edition); companies identified as the largest exporters of the voivodeship; companies indicated by the voivodeship's public institutions among SMEs, including those distinguished in terms of CSR (fairplay group entities). All of them had experience in making decisions about the location of their own investments, hence their assessments were considered crucial for the evaluation of a given location.

The second study covered the entire population of foreign-owned enterprises based in the voivodeship. The research tool was a survey questionnaire. Forty-seven correctly completed questionnaires were obtained. Relating the number of enterprises participating in the survey to the number of enterprises with foreign capital based in the Kujawsko-Pomorskie Voivodeship indicated by the Central Statistical Office (434 enterprises at the end of 2020), it can be indicated that nearly 11% of the surveyed population participated in the study.

[2] The study was commissioned by the Pomeranian Special Economic Zone Ltd. as part of the implementation of the scientific research project "Investment attractiveness of the Kuyavian-Pomeranian Voivodeship".

Conclusions regarding the actual investment attractiveness were based on assessments formulated by investors in response to a specially prepared survey questionnaire. They have a particular cognitive value. These assessments that take into account the reasons for specific decisions about the choice a location for business operations. As can be assumed, these decisions were guided by the recognition of potential attractiveness, which certainly influenced the assessments expressed in the present study. However, what is important, the investors formulated them post factum – thus having the opportunity to compare the reasons for location decisions with the actual state of investments.

It should be emphasised that the results presented here pertain only to the Kujawsko-Pomorskie Voivodeship, so they cannot be standardized to other voivodeships of Poland.

3. Results

3.1. The Real Estate Market of Polish Voivodeships – Potential Attractiveness

As indicated earlier, the adopted characteristics of the real estate market fit into the image of investment attractiveness by referring to its resource and efficiency factors.

The main resource factor is the availability of suitably prepared investment areas ($F_{res.}1$). As of 17 April 2023, the Polish Agency for Trade and Investment (PAIH) database of investment areas contained 1189 offers, of which 1058 were undeveloped areas with a total area of 15,357.8 ha, while 92 related to built-up areas (mainly warehouses, storage-production, production, service-production halls). This database also included 34 offers of office space and 5 properties intended for tourist activity. The Wielkopolskie Voivodeship had the highest number of undeveloped investment areas (157). In the second place, with 120 offers, was the Kujawsko-Pomorskie Voivodeship. The next places in this list were occupied by the following voivodeships: Lubelskie (80), Pomorskie (78), Małopolskie and Śląskie (ex aequo 69 each). The voivodeships with the smallest offer of undeveloped investment areas were: Świętokrzyskie (22), Lubuskie (30), Podlaskie (33) and Warmińsko-Mazurskie (37). The most extensive investment areas were located in the Łódzkie, Opolskie and Wielkopolskie voivodeships (the median area of these areas was: 6.95, 6.05 and 6.00 ha respectively). The voivodeships with the largest investment areas were Podkarpackie (822 ha), Świętokrzyskie (600 ha), Kujawsko-Pomorskie (468 ha) and Wielkopolskie (316 ha) (Table 2, Appendix).

Built-up areas and office space constituted a small part of the investment properties listed in the described database. The largest number of offers concerning built-up areas was found in the Opolskie (17), Kujawsko-Pomorskie (12), Pomorskie (12), Podkarpackie (10) and Wielkopolskie (10) voivodeships, while in the case of office space: Mazowieckie (6), Kujawsko-Pomorskie (5), Pomorskie and Śląskie (4 each) (Table 2, Appendix).

Numerical values calculated for the variable concerning the total area of undeveloped investment areas allowed for the identification of 3 voivodeships in class A – Wielkopolskie, Kujawsko-Pomorskie and Podkarpackie. Another 3 voivodeships were placed in class B. These included: Łódzkie, Opolskie and Świętokrzyskie. In class C, 4 voivodeships were grouped: Dolnośląskie, Lubelskie, Zachodniopomorskie and Śląskie, while in class D, the remaining 6 – Pomorskie, Warmińsko-Mazurskie, Małopolskie, Podlaskie, Mazowieckie and Lubuskie.

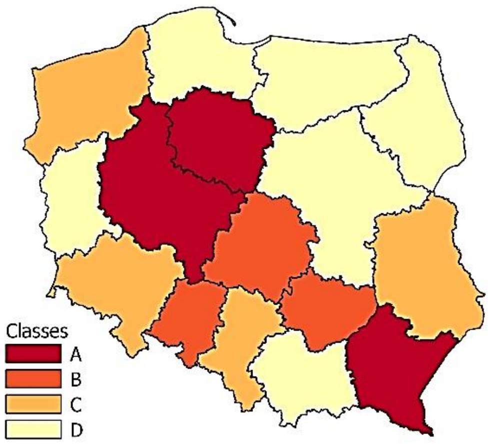

Figure 1. Classes of Polish voivodeships within the "availability of investment areas" factor.
Source: own study.

Planning conditions – more specifically, the "coverage of areas with zoning plans" – measured by the proportion of the area covered by valid local spatial development plans (Fres.2), are indicated as an important factor determining attractiveness. The southern regions of Poland – Śląskie (73%), Małopolskie (69.1%) and Dolnośląskie (66.2%) voivodeships – are characterised by the highest level of area coverage by local spatial development plans. The average indicator for the entire country is at the level of 31.7%. Taking this into account, the worst-performing voivodeships are: Kujawsko-Pomorskie (7.9%), Lubuskie and Podkarpackie (ex aequo 9.3%) and Warmińsko-Mazurskie (13.9%). It should be noted that zoning plans are mainly prepared for areas with a higher degree of urbanisation, less often for agricultural, forest and lake areas. Therefore, when interpreting this indicator, the natural values of a given voivodeships (lake districts, large forest complexes, river valleys) should be borne in mind.

Numerical values calculated for the discussed variable formed the basis for distinguishing 5 voivodeships in class A – Śląskie, Małopolskie, Dolnośląskie, Lubelskie, and Opolskie. In class B, there are 4 voivodeships: Mazowieckie, Łódzkie, Świętokrzyskie, and Pomorskie. In class C, the voivodeships of Wielkopolskie, Zachodniopomorskie, Podlaskie and Warmińsko-Mazurskie were grouped, while in class D – Lubuskie, Podkarpackie, and Kujawsko-Pomorskie.

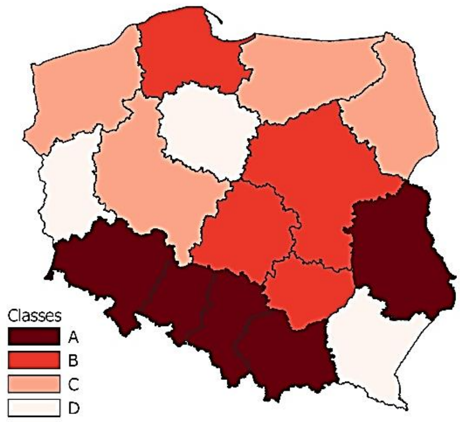

Figure 2. Class of Polish voivodeships in terms of "coverage of areas with local spatial development plans".

Source: own study.

Another location factor affecting investment attractiveness, and thus potentially influencing the decision to locate capital, is the proportion of legally protected land in the total land area ($F_{res.}3$).

The numerical values calculated for the presented variable situated 6 voivodeships in class A: Dolnośląskie, Łódzkie, Zachodniopomorskie, Śląskie, Lubelskie, and Opolskie. In class B, seven: Wielkopolskie, Mazowieckie, Podlaskie, Kujawsko-Pomorskie, Pomorskie, Lubuskie, and Podkarpackie. In class C, there are 3 voivodeships: Warmińsko-Mazurskie, Małopolskie, and Świętokrzyskie. Class D was not distinguished.

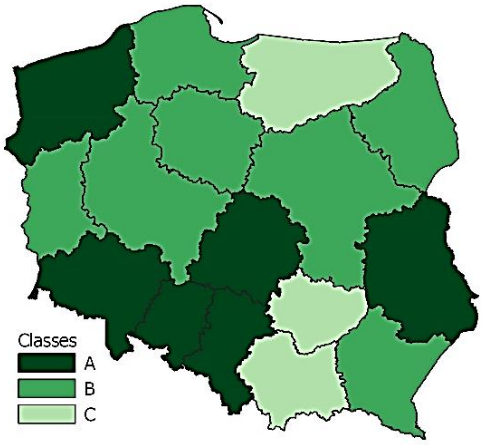

Figure 3. Class of Polish voivodeships in terms of "proportion of legally protected land in the total land area".

Source: own study.

Among the investment attractiveness factors covered by the study, two fall into the efficiency group, namely: average prices of properties intended for development ($F_{eff.}1$) and average prices of residential premises ($F_{eff.}2$). The first one, as stated above, was placed second among all determinants in the expert study. The price of potential investment sites undoubtedly constitutes an investment attractiveness of the region. The voivodeships with the lowest prices, and therefore the most attractive considering this determinant, are: Warmińsko-Mazurskie

(29.50 PLN/m^2), Świętokrzyskie (33.86 PLN/m^2) and Łódzkie (42.70 PLN/m^2). The highest prices of properties intended for development characterise the Zachodniopomorskie (145.96 PLN/m^2), Mazowieckie (137.38 PLN/m^2) and Małopolskie (136.92 PLN/m^2) voivodeships. The average price per square metre for the entire country is 84.90 PLN/m^2.

Numerical values calculated for the presented variable formed the basis for distinguishing four classes of voivodeships. 6 were identified in class A, characterised by lowest prices: Warmińsko-Mazurskie, Świętokrzyskie, Łódzkie, Lubelskie, Lubuskie, and Kujawsko-Pomorskie. In class B, there are 4 voivodeships: Podkarpackie, Opolskie, Podlaskie, and Śląskie. In class C, there are 2 voivodeships: Dolnośląskie and Wielkopolskie, while in class D: Pomorskie, Małopolskie, Mazowieckie, and Zachodniopomorskie.

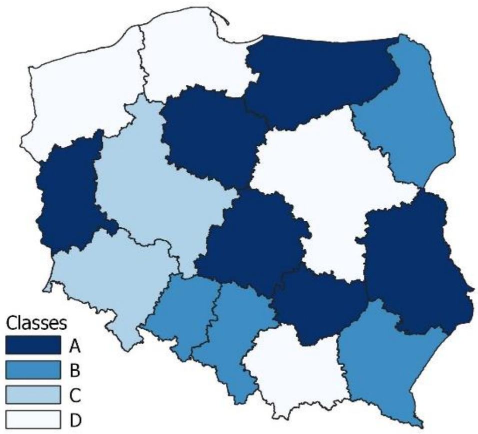

Figure 4. Class of Polish voivodeships in terms of "prices of properties intended for development".
Source: own study.

According to the experts, the least important factor shaping investment attractiveness through the prism of the real estate market concerns the average prices of residential premises. The voivodeships characterised by the lowest levels of this variable are: Opolskie (4,091 PLN/m^2), Lubuskie (4,272 PLN/m^2), and Śląskie (4,449 PLN/m^2). The voivodeships with the highest average prices of local properties are: Małopolskie (8,032 PLN/m^2), Mazowieckie (7,845 PLN/m^2), and Pomorskie (6,878 PLN/m^2).

Numerical values calculated for the presented variable were the criterion for indicating four classes. 4 voivodeships were situated in class A, characterised by the lowest prices of premises, namely: Opolskie, Lubuskie, Śląskie, and Warmińsko-Mazurskie. Class B includes as many as 8 voivodeships: Wielkopolskie, Kujawsko-Pomorskie, Zachodniopomorskie, Świętokrzyskie, Podkarpackie, Łódzkie, Podlaskie, and Lubelskie. In class C, there are 3 voivodeships: Dolnośląskie, Pomorskie, and Mazowieckie, while in class D there is the Małopolskie Voivodeship, which was characterised by the highest prices of residential premises.

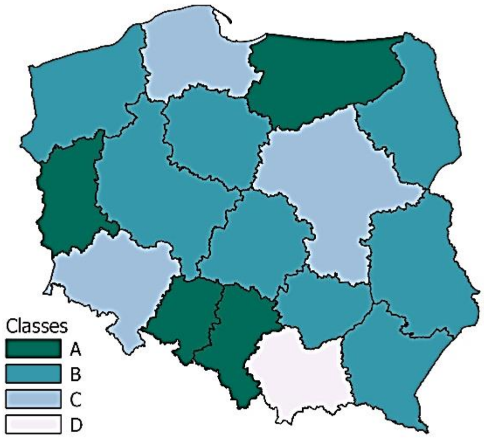

Figure 5. Classes of Polish voivodeships according to the "prices of residential premises" factor.
Source: own study.

Based on the numerical values of the synthetic parameter, calculated as the average value of partial parameters characterising individual factors and their assigned weights, four classes of voivodeships were distinguished. In class A, characterised by the highest level of potential investment attractiveness in the residential real estate market, there were 8 voivodeships: Łódzkie, Lubelskie, Kujawsko-Pomorskie, Opolskie, Wielkopolskie, Śląskie, Dolnośląskie and Podkarpackie. The next two classes each grouped 3 voivodeships - in class B: Świętokrzyskie, Warmińsko-Mazurskie and Lubuskie; in class C: Podlaskie, Zachodniopomorskie and Małopolskie. Voivodeships; Pomorskie and Mazowieckie were placed in class D.

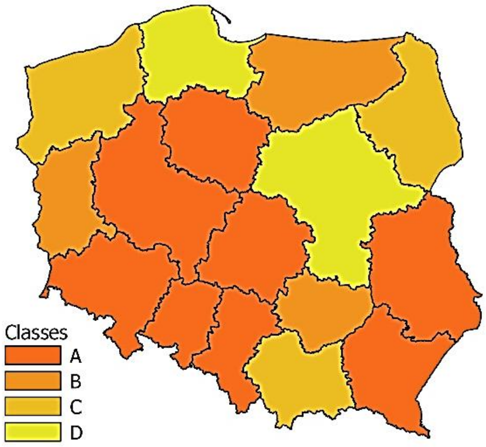

Figure 6. Potential investment attractiveness of Polish voivodeships in the real estate market area.
Source: own study.

3.2. Real Estate Market Characteristics – Actual Attractiveness

The study conducted among companies that invested capital in the Kujawsko-Pomorskie Voivodeship confirmed the importance of location factors related to the real estate market. In the ranking of factors influencing investment attractiveness, the described characteristics of the real estate market received high ratings.

Companies pointed out as a significant factor of investment attractiveness of the Kujawsko-Pomorskie Voivodeship the possibility of owning large areas of land (plots). As much as 80% of companies indicated that the availability of adequately prepared areas for conducting business activities positively affects the investment attractiveness of the voivodeship, including 10% indicating that this impact is definitely positive. For 5% of respondents, this factor did not matter, and only 15% perceived its influence as negative.

The assessment of the possibility of implementing investments based on a zoning plan was similarly high – 80% defined this factor as positively shaping the investment attractiveness of the voivodeship, with as many as 30% of respondents indicating that this is a definitely positive factor. However, it should be noted that some companies perceive this factor as negatively affecting investment attractiveness, which can be interpreted in two ways: either that a low percentage of the voivodeship is covered by zoning plans, or that zoning plans established under the Act of 2003 on planning and spatial development (Ustawa, 2003) are excessively detailed and therefore limit the flexibility of design and preparation of investment processes (Hajduk, Baran, 2013, p. 122).

Slightly fewer companies positively assessed the availability of premises for conducting business activities (75%). Another 15% indicated that the factor does not matter for investment attractiveness, and 25% believed that it has a moderately negative (20%) and negative (5%) impact.

The importance of efficiency factors related to the real estate market was confirmed by studies conducted among companies with foreign capital in the Kujawsko-Pomorskie Voivodeship. Property prices and rental, lease prices were ranked third among the determinants of investment location choice. This is confirmed by the results of the analysis regarding this characteristic in the potential attractiveness presented above. The Kujawsko-Pomorskie Voivodeship was in the highest attractiveness class (A) considering the prices of properties intended for construction, and in class B considering the price of residential properties.

4. Discussion

Individual countries/regions around the world differ in their level of investment attractiveness, which is derived from various factors grouped into so-called "pillars of attractiveness". Investors choose where to invest capital based on an assessment of how much a particular location allows for the fulfilment of intentions related to the expected combination of these factors. The factors of investment attractiveness and their combinations are not constant, nor do they form closed sets. Their evaluation in the context of specific investment decisions is individual.

In Poland, a significant differentiation is observed among individual voivodeships and their areas in terms of potential investment attractiveness (Gawlikowska-Hueckel, 1999, 2000; Wdowicka, 2006; Godlewska-Majkowska, 2008, 2009, 2013; Anholcer, 2009; Nazarczuk, 2013; Jaworek et al., 2023).

Potential investment attractiveness also differentiates individual Polish voivodeships in the context of the real estate market (Jaworek et al., 2023). According to the study, an important place for investment attractiveness in the context of the real estate market is the availability of land and housing stock. Similar conclusions were formulated by Lizinska and Kisiel who emphasize that, the procurement of suitable property is a fundamental factor influencing the location decision. When assessing a particular property, a range of both quantitative and qualitative attributes are taken into consideration (Lizińska, Kisiel, 2012, p. 290). It is clear that regions with land prepared for development and high levels of infrastructural development have an advantage.

In countries whose laws contain regulations on how to make determinations about land use, as is the case in Poland, both the existing regulations and their execution play a critical role in location decisions. In this context, for Poland, the determinant related to the so-called coverage with spatial development plans is also significant. The existence of a zoning plan considerably reduces investment risk, and also shortens the time it takes to apply for a construction permit, hence shortening the investment process itself. Zoning plans can serve as an economic instrument (Sztando, 2003; see: Kukulska et al., 2017, p. 98) and be a stimulator of the economic development of the region (Hełdak, 2006; see: Kukulska et al., 2017, p. 98).

Factors reducing potential investment attractiveness may include constraints on land availability tied to their specific purposes defined in the local spatial development plan, or nature protection, exemplified by “Natura 2000” areas, national parks, landscape parks, nature reserves, and so forth. Not only the protected status of an area, but also proximity to such areas can significantly limit the location of investments related to industrial activity, contrasting with investments for the provision of tourist services. In Poland, areas under nature protection cover 12,561,226 hectares, accounting for as much as 40.2% of the country's area (Ambrozik, 2015, p. 65). As Pawlewicz et al. (2017, p. 725) points out, the presence of a “Natura 2000” areas can have a potentially limiting effect on an area's attractiveness to investors. It is worth emphasising that investors often decide to situate investments in areas characterised by significant natural assets and located a considerable distance from large agglomerations (Simon, 1999, 184).

The results of research conducted for many years show that the significance of factors considered by enterprises in location decisions varies. However, the investment attractiveness of countries/regions is invariably rooted in their advantages: resource-based (access to specific resources), market-based (absorption of the local market or markets accessible to entities located in a given country), efficiency-based (costs of doing business, achievable productivity), institutional. Significant locational factors also include those related to the real estate market, which mainly fall within the groups of resource-based and efficiency-based factors, as confirmed by the study results presented above. Their importance was already confirmed in the studies conducted in the 1960s by Bergin and Eagan (1964, cited in: Dziemianowicz, 1997) and K. Brenke (1996, cited in: Dziemianowicz, 1997). The possibility and conditions for acquiring real estate have been identified also among the most important factors for choosing Poland as a location for FDI in studies conducted in the late-1990s by W. Karaszewski (Karaszewski, 2001, pp. 294-300) and M. Stawicka (Stawicka, 2007, p. 148). Throughout the past three decades, property market prices have been high on the hierarchy of determinants of FDI location decisions in Poland (Jaworek, Karaszewski, 2022), with different placements in individual voivodeships (Sokołowicz, 2006; Jaworek et al., 2016).

Qualities of the real estate market measured by its characteristics are significant in investment decisions concerning the choice of country. However, attention should be paid to the fact that locational factors related to efficiency aspects, such as property prices, differ for individual regions of the country. The results presented above regarding the location of investments in the Kujawsko-Pomorskie Voivodeship prove that purchase and rental prices were important determinants in choosing this region for conducting business activities. This is also confirmed by earlier research results concerning the Kujawsko-Pomorskie Voivodeship, in which these factors were among the most important determinants of location decisions (Karaszewski, 2004; p. 234; Czaplewski et al., 2005, 89; Szałucka, Szóstek, 2012, 75; Jaworek et al., 2016, p. 127). They were also important for enterprises that invested in the Łódzkie or Warmińsko-Mazurskie Voivodeships (Kisiel et al., 2015, p. 31; Różanski et al., 2015, p. 29). Investment land prices were also important determinants of undertaking foreign investment in the West Pomeranian region (Woźniak-Miszewska, 2011). By contrast, characteristics related to property prices turned out to be decidedly less important for investors who undertook an investment in the Wielkopolskie Voivodeship (Pawlak et al., 2015, p. 34).

5. Summary

There is no doubt that the diversification of investment attractiveness of countries/regions results in differential interest from investors considering the choice of investment location. Therefore, countries/regions interested in economic intensification must undertake actions aimed at achieving a sufficiently high attractiveness for investors looking for the most favourable capital placements. To effectively formulate actions aimed at increasing the investment attractiveness of the country/region, it is necessary to conduct research aimed at identifying its factors, especially since they change over time. Recognising them is also an important determinant of effective promotion of the country/region as a place for investment.

The majority of publications devoted to the issue of investment attractiveness of countries/regions cite results of studies of potential attractiveness. These results are parametrised with values calculated on the basis of secondary data, taking into account separated groups of factors comprising potential attractiveness, including factors related to local real estate markets. Such studies, like research conducted with the participation of the authors of this study, have confirmed the significant importance of this group of factors.

The in-depth study of the role of the real estate market in the assessment of investment attractiveness conducted by the article's authors shows a significant diversification of individual characteristics of this market, considered among the attractiveness factors of the Polish voivodeships. Both the results of the study of potential investment attractiveness, and actual attractiveness based on investor assessments, point to the highest importance of the availability of land and premises, which is one of the resource attractiveness factors. In second place came in price characteristics of the real estate market, which belong to the group of efficiency factors. Also important are planning conditions measured by the share of area covered by current local spatial development plans – a parameter commonly referred to as "coverage of areas with zoning plans". This characteristic of the real estate market belongs both to the group of resource factors and of institutional factors. It is also worth noting the share of legally protected land in the total land area. Although a high numerical value of this parameter may indicate a limitation in the availability of land for investment purposes, it does not necessarily mean that it is a deterrent to investment attractiveness. It is the premises arising from the assessment of actual investment attractiveness that justify the initiation of a discussion aimed at answering the question about the actual place of this characteristic among the factors of investment attractiveness.

The present in-depth study of real estate market characteristics among investment attractiveness factors aimed to fully illuminate their diversification in Poland. The assessment of individual Polish voivodeships in relation to these characteristics has brought forth a picture that can be used in the activities of authorities aimed at increasing the level of attractiveness and promoting the voivodeship as a potential place of investment.

Please put here the acknowledgements for private individuals or institutions that contributed significantly to the publication, as well as information about the projects, in which the article was created. This section is optional and can be omitted by the author.

Acknowledgements

The authors of the study would like to thank the experts who took part in the study and will share their valuable comments.

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Appendix

Table 2.
Investment areas in Poland – data from the Polish Investment and Trade Agency (as of 17.04.2023)

No.	Voivodeship	Undeveloped areas				Built-up areas	Office space
		Number of offers	Surface area [ha]			Number of offers	
			Total	Median	Maximum		
1	Dolnośląskie	64	825.00	4.49	154.00	6	—
2	Kujawsko-Pomorskie	120	2,455.82	5.29	468.00	12	5
3	Lubelskie	80	765.58	2.91	88.00	2	2
4	Lubuskie	30	212.34	3.52	38.92	1	—
5	Łódzkie	68	1,162.06	6.95	203.00	2	3
6	Małopolskie	69	401.74	2.40	88.20	4	3
7	Mazowieckie	50	310.86	2.81	88.41	1	6
8	Opolskie	66	1,065.19	6.05	158.00	17	2
9	Podkarpackie	52	1,906.85	4.30	822.00	10	2
10	Podlaskie	33	391.48	2.10	150.00	—	1
11	Pomorskie	78	520.36	2.65	82.16	12	4
12	Śląskie	69	563.22	3.88	64.00	3	4
13	Świętokrzyskie	22	868.22	5.05	600.00	5	—
14	Warmińsko-Mazurskie	37	495.62	5.90	114.50	2	—
15	Wielkopolskie	157	2,725.50	6.00	316.00	10	2
16	Zachodniopomorskie	63	687.87	2.10	203.00	5	—
	Total	**1058**	**15,357.71**	**4.04**	**822.00**	**92**	**34**

Source: own study based on (Polish Investment and Trade Agency, 2023).

Table 3.
Determinants of real estate investment attractiveness of Polish voivodships

Voivodeship	$F_{res.}1$		$F_{res.}2$		$F_{res.}3$		$F_{eff.}1$		$F_{eff.}2$	
	Di	Dij	Di	Dij	Di	Dij	Di	Dij	Di	Dij
	ha	%	%	%			PLN/m^2	%	PLN/m^2	%
Dolnośląskie	825.00	24.38	66.2	89.55	18.6	100.00	84.90	41.53	6 105	48.90
Kujawsko-Pomorskie	2455.82	89.27	7.9	0.00	32.2	70.63	97.59	65.48	5 180	72.37
Lubelskie	765.58	22.01	57.2	75.73	22.7	91.14	69.70	83.79	6 093	49.20
Lubuskie	212.34	0.00	9.3	2.15	37.4	59.40	48.37	80.32	4 272	95.41
Łódzkie	1162.06	37.79	32.9	38.40	19.5	98.06	52.42	88.67	5 692	59.38
Małopolskie	401.74	7.54	69.1	94.01	53.1	25.49	42.70	7.76	8 032	0.00
Mazowieckie	310.86	3.92	33.9	39.94	29.7	76.03	136.92	7.36	7 845	4.74
Opolskie	1065.19	33.94	42.1	52.53	27.6	80.56	137.38	63.11	4 091	100.00
Podkarpackie	1906.85	67.43	9.3	2.15	44.9	43.20	72.46	65.13	5 369	67.57
Podlaskie	391.48	7.13	16.5	13.21	31.6	71.92	70.10	58.84	5 763	57.57
Pomorskie	520.36	12.26	21.8	21.35	33.0	68.90	77.43	11.11	6 878	29.28
Śląskie	563.22	13.96	73.0	100.00	22.1	92.44	133.02	42.75	4 449	90.92
Świętokrzyskie	868.22	26.10	31.3	35.94	64.9	0.00	96.18	96.26	5 211	71.58
Warmińsko-Mazurskie	495.62	11.27	13.9	9.22	46.7	39.31	33.86	100.00	4 873	80.16
Wielkopolskie	2725.50	100.00	21.5	20.89	29.6	76.24	29.50	21.12	5 109	74.17
Zachodniopomorskie	687.87	18.92	20.9	19.97	21.8	93.09	121.36	0.00	5 199	71.89

Note. F_i – level of the variable; F_{ij} – level of the standardised variable; $F_{res.}1$ – availability of investment areas (surface area) according to the database of the Polish Investment and Trade Agency (as of 17.04.2023); $F_{res.}2$ – percentage of area covered by current local spatial development plans (%) (as of 31.12.2021, update 15.09.2022); $F_{res.}3$ – percentage of legally protected areas in total surface area (%) (as of 31.12.2021, update 27.03.2023); $F_{eff.}1$ – average price of real estate designated for development (for investment purposes) (PLN/m2) (for residential, industrial, commercial and service development and real estate for other development; as of 31.12.2021); $F_{eff.}2$ – median prices of residential properties sold in market transactions (PLN/m^2) (as of 31.12.2021, update 14.10.2022).

Source: own study based on (Polish Investment and Trade Agency, 2023; Local Data Bank of the Statistics Poland, 2023).

SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

A REVIEW OF THE IMPACTS AND IMPLICATIONS OF WEBAR ON THE 4PS

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Purpose: The rapid ascent of digital technology has consistently altered the landscape of traditional marketing, presenting both novel challenges and opportunities. This review endeavors to dissect and elucidate the intricate relationship between Web-based Augmented Reality (WebAR) and the cornerstone of marketing strategy: the 4Ps – Product, Price, Place, and Promotion.
Design/methodology/approach: Drawing on a comprehensive analysis of existing scholarly works, industry reports, and case studies, the article illuminates the current manifestations of WebAR within the 4Ps framework, demonstrating its transformative capacity in areas such as product visualization, dynamic pricing displays, virtual storefronts, and augmented promotional campaigns.
Findings: Through the synthesis, the article underscores the imperative for marketers to understand, adapt, and innovate in the face of an increasingly augmented digital landscape, even in the absence of quantitative metrics.
Originality/value: The findings serve as both a foundational resource for scholars and a strategic guide for practitioners seeking to navigate the confluence of WebAR and modern marketing.
Keywords: Augmented Reality, Web Augmented Reality, Marketing Mix, Review.
Category of the paper: Literature review.

1. Introduction

In an age dominated by rapid technological advancements, staying ahead of the curve is not just beneficial but often necessary for survival in the cutthroat world of business (Ahlstrom et al., 2020). New technologies often bring about shifts in consumer behaviour, demands, and expectations. Companies that are early adopters and adept at integrating these innovations into their operations or offerings are often better positioned to capitalize on new market opportunities, enhance their brand value, and secure customer loyalty (Chanyasak, Koseoglu, King, Aladag, 2022). Leveraging new technologies can also foster internal efficiencies, drive down operational costs, and open avenues for new revenue streams (Sjödin, Parida, Palmié, Wincent, 2021). Competitive operating environments also requires organizations to explore new capabilities and exploit current capabilities for sustained innovation (Wang, Hsu, 2014) with Radicic and Petković (2023) positing that the sustained success of SMEs is directly related to their ability to adopt emerging technologies. However, for all the benefits, it's equally critical to understand the implications of these technologies on existing business models and strategies. This is where the exploration of the impacts of technologies like WebAR on established frameworks like the 4Ps becomes invaluable.

In an age dominated by rapid technological advancements, staying ahead of the curve is not just beneficial but often necessary for survival in the cutthroat world of business (Ahlstrom et al., 2020). New technologies often bring about shifts in consumer behaviour, demands, and expectations. Companies that are early adopters and adept at integrating these innovations into their operations or offerings are often better positioned to capitalize on new market opportunities, enhance their brand value, and secure customer loyalty (Chanyasak et al., 2022). Leveraging new technologies can also foster internal efficiencies, drive down operational costs, and open avenues for new revenue streams (Sjödin et al., 2021). Competitive operating environments also requires organizations to explore new capabilities and exploit current capabilities for sustained innovation (Wang, Hsu, 2014) with Radicic and Petković (2023) positing that the sustained success of SMEs is directly related to their ability to adopt emerging technologies. However, for all the benefits, it's equally critical to understand the implications of these technologies on existing business models and strategies. This is where the exploration of the impacts of technologies like WebAR on established frameworks like the 4Ps becomes invaluable.

Web-based Augmented Reality, commonly known as WebAR, is an innovative technology that allows users to experience augmented reality (AR) directly through web browsers, without the need for specialized apps or software (Jeganathan, Szymkowiak, 2023). By merging the physical and digital worlds, WebAR provides enriched and immersive experiences that are easily accessible to a wide range of users. The advantages of WebAR over traditional AR are numerous. Firstly, by eliminating the need for app downloads, WebAR removes barriers to entry, making AR experiences more inclusive and instantly available (Baruah, 2021). This immediacy is pivotal in a world where consumers expect seamless interactions. Secondly, given its browser-based nature, WebAR ensures wider compatibility across devices, ensuring a more extensive reach (Krasko, 2021). Finally, from a business perspective, the ease of sharing WebAR experiences (via simple web links) can significantly enhance viral marketing potentials and consumer engagement.

While the advantages and potential applications of WebAR are evident and has seen usage by many brands, its implications and impacts on the traditional 4Ps of marketing are less explored in literature. Given the profound ways in which technology has reshaped business paradigms in the past, it's reasonable to postulate that WebAR could redefine how products are developed, priced, placed, and promoted. Yet, comprehensive analysis in this specific context remains scarce. The aim of this research therefore is to undertake a comprehensive review of the impacts and implications of WebAR on the 4Ps of modern organisations today. We consider this pivotal as WebAR emerges as a potent force in the confluence of technology and business, and understanding its impacts on established frameworks are important for business improvements. This research aims to shine a spotlight on this critical area, providing valuable insights for scholars and business leaders alike.

This research seeks to make pivotal contributions both to the academic realm and the world of business. From a scientific perspective, it aims to extend the literature on the interplay between emerging technologies and traditional marketing frameworks. By offering a comprehensive analysis of WebAR's effects on the 4Ps, it will provide scholars with a foundational understanding, paving the way for further research into the nuances of WebAR’s implications across various industries and contexts. For businesses, this research offers actionable insights that can guide strategy formulation and execution in a WebAR-augmented world. By understanding the potential shifts and disruptions caused by WebAR on the 4Ps, businesses can better anticipate challenges, harness opportunities, and fine-tune their strategies to align with the evolving landscape. This, in turn, can lead to enhanced customer engagement, optimized marketing efforts, and improved bottom-line results.

2. A review of the Impacts and Implications of AR on the 4Ps

The 4Ps—Product, Price, Place, and Promotion—serve as the bedrock of marketing strategy, collectively shaping the way companies position and sell their offerings in the marketplace (Al Badi, 2018; Festa, Cuomo, Metallo, Festa, 2016). The "Product" element embodies the solutions businesses provide, be it physical goods or intangible services, tailored to address specific consumer needs or desires (Armstrong, 2009). "Price" not only refers to the monetary cost but also represents the perceived value, determining the balance between attractiveness to consumers and profitability for businesses. "Place" emphasizes the importance of optimal distribution channels, ensuring that products are available where and when consumers want them. Lastly, "Promotion" encapsulates the myriad communication strategies and tools used to create awareness, generate interest, and drive purchase decisions. In the modern business era, where competition is rife and consumers are empowered with more information and choices than ever, merely understanding and implementing the 4Ps is not enough. To truly thrive and surpass competitors, businesses must perpetually innovate within these parameters (Am, Furstenthal, Jorge, Roth, 2020). This might involve reimagining products to cater to emerging consumer trends (Arora, Dahlström, Hazan, Khan, Khanna, 2020), recalibrating pricing strategies in light of global economic shifts, leveraging technology to redefine distribution methods (Singireddy, Daim, 2018), or harnessing novel promotional techniques like digital and influencer marketing (Campbell, Farrell, 2020). In essence, the 4Ps, while foundational, are not static. They demand continuous evolution in response to both market dynamics and competitive pressures. Companies that proactively seek to innovate and optimize their 4Ps positioning are better equipped to distinguish themselves in the marketplace, thereby achieving not just relevance but also a definitive competitive advantage.

Augmented Reality (AR) has carved its niche as one of the most transformative technologies of the 21st century. By superimposing digital data onto the real world, AR provides an immersive experience that blurs the boundary between the physical and the virtual, thereby enhancing users' perception and interaction with their surroundings (Hilken, De Ruyter, Chylinski, Mahr, Keeling, 2017). From gaming and entertainment to healthcare and education, AR has found multifaceted applications, reshaping the way we understand and interact with technology (Gatter, Hüttl-Maack, Rauschnabel, 2022). A noteworthy iteration of this technology is WebAR, which brings the wonders of augmented reality directly to web browsers without the need for dedicated applications (Frangoudis, 2020). It stands at the intersection of digital innovation and user experience, enabling augmented reality experiences directly through web browsers without the need for specialized apps (Jeganathan, Szymkowiak, 2023). By merging digital elements with the physical environment, WebAR provides users with a unique, immersive interaction that's easily accessible. This technological breakthrough has profound implications for the traditional 4Ps of marketing—Product, Price, Place, and Promotion. By integrating WebAR, businesses can enhance and reimagine these marketing pillars, making their strategies more dynamic, interactive, and tailored to the contemporary consumer. The overarching potential of WebAR lies in its ability to amplify the effectiveness of the 4Ps, offering enriched consumer experiences, broader accessibility, and more engaging promotional tactics. As the digital landscape continually evolves, leveraging tools like WebAR becomes pivotal for businesses aiming to stay ahead of the curve and fortify their marketing strategies in an increasingly competitive market.

When comparing traditional AR with WebAR in table 1, several key differences emerge. Firstly, WebAR democratizes the AR experience, eliminating the barriers of app installations and downloads. It leverages the ubiquity of internet browsers, making AR experiences instantly accessible to a larger audience across various devices (Jeganathan, Szymkowiak, 2023). This immediate accessibility offers brands and developers a wider reach. Secondly, updates to WebAR experiences can be made in real-time without necessitating users to download updates, as is often the case with standalone AR apps (Klavins, 2022). However, it's worth noting that the depth and complexity of WebAR experiences might currently be limited compared to dedicated AR apps due to browser and internet limitations. Yet, with the rapid advancements in web technologies, this gap is expected to narrow, making WebAR an increasingly attractive medium for delivering augmented experiences. In the coming section, the paper will discuss WebAR's potential for improving the marketing mix as shown in figure 1, based on extant academic literature on AR as well as that of practitioner literature.

Table 1.
Comparison of WebAR against the traditional AR

Factor	Traditional mobile app AR	WebAR
Cost of development for organizations	High as the mobile app needs to be deployed across both iOS and Android operating systems and this requires specialized engineers	Low as there are software as a service (SAAS) model organization's that allow businesses to create custom AR experiences at a fraction of the cost of a traditional AR app
Download requirements	Requires users to download the app, taking up storage space on the device	Users do not need to download an app as the AR experience is via the web. All that is required is to visit a website
Device compatibility issues	Developers need to be concerned with releasing a mobile app functioning well on both iOS and Android operating systems across many devices	Less reliance on device compatibility as the AR experience is served via the web
Storage limitations	Downloading the app requires users to expend storage space	No storage demands
Ease of accessibility for users	Requires users to download an app onto a mobile device, which increase barriers to entry	High accessibility as a user only needs to access a website
Ease of maintenance and pushing content updates for organization's	Organizations would be required to expend resources for maintenance as these updates would need to be released and the users would need to download said update. Such updates can end up taking more storage space	Pushing updates is a convenient process as the user would only see the most up to date content as they are accessing the AR experience via the web

Source: Author developed (2023).

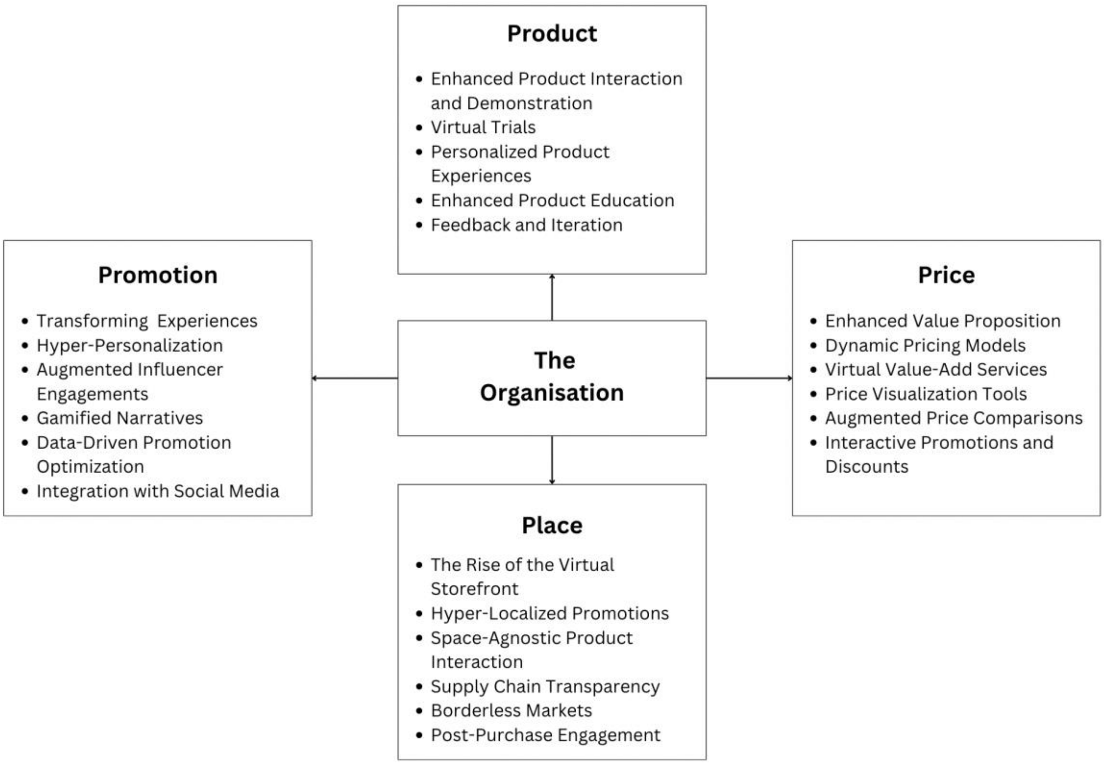

Figure 1. Summary of WebAR's implications on the 4Ps. Author developed (2023).

2.1. Product

In the intricate world of product development and positioning, the integration of WebAR offers transformative possibilities, making the "Product" aspect of the 4Ps more dynamic and experientially rich. The first possibility we see is in enhanced product interaction and demonstration as traditional product displays, whether in physical stores or online catalogues, offer a passive experience (Poushneh, Vasquez-Parraga, 2017). WebAR elevates this by allowing consumers to interact with products in a virtual space. For instance, furniture retailers can employ WebAR to let consumers visualize how a particular piece would look in their own living space (Alves, Luís Reis, 2020). This not only aids in informed decision-making but also reduces potential post-purchase dissonance (Pantano, Rese, Baier, 2017). Particularly relevant for complex products, WebAR can be a game-changer in such product demonstrations. Consider a new gadget infused with a myriad of features. Rather than reading a manual or watching a video, consumers can use WebAR for a hands-on, interactive exploration, understanding features and benefits in a more immersive and intuitive manner. The second is in industries such as fashion and cosmetics who can benefit immensely from WebAR by offering virtual try-ons (Baytar, Chung, Shin, 2020). Consumers can see how a clothing item fits or how a shade of lipstick looks on them without physically trying them on. This immersive experience can lead to increased confidence in product selection, potentially boosting sales and reducing return rates (Kowalczuk, Siepmann, Adler, 2021). These experiences can be further improved as WebAR can be tailored to offer personalized experiences based on user preferences or past behaviours. For instance, a consumer exploring a car can be shown features and customizations tailored to their preferences, enhancing the product's appeal by making the exploration feel unique to them.

We also credit WebAR with the possibilities to enhance product education as complex products, especially in the tech and electronics sectors, can sometimes be challenging for consumers to grasp. WebAR can break down these complexities, offering layered, interactive product tutorials. Consumers can explore products layer by layer, gaining a deeper understanding and appreciation of the product's value propositions. Another possible usage of WebAR lies in its utility as a feedback tool. By observing how consumers interact with products in a virtual space, businesses can gather insights into product strengths and areas of improvement. This real-time feedback can be invaluable in iterative product development, ensuring offerings are more closely aligned with consumer desires and expectations. Incorporating WebAR into the product facet of the marketing mix not only enriches the consumer experience but also provides businesses with tools to refine and enhance their offerings continually. As the lines between the digital and physical worlds continue to blur, WebAR emerges as a pivotal asset in product presentation, exploration, and evolution (Jeganathan, Szymkowiak, 2023).

2.2. Price

The pricing strategy in marketing has always been a delicate balance of perceived value, costs, competition, and demand. With the advent of WebAR, new dimensions are introduced that can influence pricing decisions and consumers' perceptions of value. WebAR can elevate the perceived value of a product by providing an enriched pre-purchase experience (Alimamy, Al-Imamy, 2022). For example, a consumer can use WebAR to get a comprehensive understanding of a product's features and benefits. This in-depth exploration can justify a higher price point due to the augmented experience and detailed knowledge the consumer gains before making a purchase. Another impact of WebAR is its ability to introduce interactive pricing scenarios where consumers can customize products and see the price changes in real-time. Think of a car buyer adding features to their vehicle and watching the price adjust with each addition. Such dynamic pricing models can lead to consumers better understanding the value of individual features, potentially leading to increased upsells. Brands can also incorporate WebAR experiences as value-add services, which can command a premium. For instance, an online training program can use WebAR for immersive lessons (Kaplan et al., 2021), and because of this enhanced mode of delivery, it can be priced higher than traditional online courses.

Another use case of WebAR lies in its ability to serve as a tool to help consumers visualize the long-term value or costs associated with a product. For instance, a consumer considering an energy-efficient appliance can use WebAR to visualize projected savings over time, making the higher initial price more palatable. WebAR can also potentially be used for augmented price comparison shopping. A consumer could scan a product in a physical store and immediately view comparable products, features, reviews, and prices from various online sources. This transparent and immediate comparison can pressure businesses to offer competitive pricing or differentiate their offerings more clearly. Another opportunity is WebAR's potential to revolutionize promotional strategies. Imagine a consumer pointing their device at an empty space in their living room and being presented with a virtual furniture sale as in the case of IKEA (Ozturkcan, 2021), where they can view items in AR and access limited-time discounts. Such immersive promotions can stimulate impulse purchases and allow brands to adjust prices based on real-time demand. Incorporating WebAR into pricing strategies offers brands a dual opportunity: to enhance the perceived value of their offerings and to engage consumers in novel, interactive pricing scenarios. As the lines between the physical and virtual shopping experience continue to meld, WebAR's influence on the price component of the 4Ps promises to be both profound and multifaceted (Daiker, Ariyachandra, Frolick, 2017).

2.3. Place

"Place" in marketing has traditionally been anchored to physical locations—a store, a showroom, or any retail outlet. But as digital transformations have reshaped commerce, "Place" is now not just about 'where' products are sold, but 'how' they are presented and accessed. WebAR is at the forefront of this evolution. Traditional online shopping provides consumers with a list or grid of products. WebAR elevates this by creating a spatial, interactive environment (Jeganathan, Szymkowiak, 2023). Instead of scrolling through images, a consumer might walk through a virtual store, selecting products off virtual shelves. This immersive experience replicates the sensory richness of physical shopping, merging the convenience of online shopping with the tangibility of offline retail. Such virtual experiences can be especially beneficial for businesses that don't have widespread physical retail presence, offering them a levelled playing field against retail giants. One way to boost the above capability is pairing geolocation with WebAR (Wang, Tekler, Cheah, Herremans, Blessing, 2021) to craft uniquely personalized shopping experiences. As consumers navigate urban landscapes, WebAR can provide them with promotions or product information relevant to their exact location. For instance, pointing a device at a vacant plot or a QR code (Kan, Teng, Chen, 2011) might reveal a virtual pop-up store for a limited-time sale or showcase an upcoming real estate development with pricing and booking options.

Products, especially ones requiring spatial context like furniture, can be a challenge to select online (Kowalczuk et al., 2021). WebAR diminishes this barrier. A consumer considering a new sofa can see how it looks in their living room, adjusting its position, orientation, and even colour. This not only aids the buying decision but can drastically reduce return rates, as consumers have a clearer expectation of the product fit within their spaces. Another potential use case is in supply chain transparency as consumers often seek ethical and sustainable products. WebAR can visualize a product's journey, from its origins to the shelf. By scanning a product, one might see where its materials were sourced, how it was manufactured, and the logistics behind its distribution. This transparent storytelling can be a significant differentiator in markets where provenance and sustainability are valuable selling points.

WebAR's universal accessibility means that product launches or showcases aren't limited to physical locations or select audiences. A brand launching a product can create a global WebAR event, inviting consumers from around the world to experience the product virtually, breaking geographical constraints and tapping into a broader audience base. The role of Place doesn't end post-purchase. Traditionally, any after-sales service required visits to service centres. With WebAR, consumers can get virtual tutorials, maintenance guides, or even diagnostic services. For instance, a consumer having trouble with a home appliance can use WebAR to get a virtual technician's guidance, making the service aspect more immediate and user-friendly. In essence, WebAR is dismantling traditional notions of Place. By weaving the virtual and physical realms, it offers brands unparalleled flexibility in how they present products, engage consumers, and provide post-purchase support. As this technology becomes more mainstream, its influence on the Place dimension of marketing will be profound, reshaping strategies and consumer expectations alike.

2.4. Promotion

The realm of promotion has always been about establishing connections between brands and their audience. WebAR, with its augmented capabilities, deepens this connection, turning passive recipients of messages into active participants in promotional narratives. One of WebAR's key potential here lies in its ability to transform static ads into dynamic experiences (Hopp, Gangadharbatla, 2016). Print ads have been a promotional staple for decades. But imagine a world where a magazine or billboard advertisement becomes a portal to an immersive experience. With WebAR, consumers can use their devices to activate static ads, unveiling 3D product models, interactive stories, or even virtual testimonials. Such enhanced interactivity keeps consumers engaged longer (McLean, Wilson, 2019), ensuring that promotional messages are not just seen but deeply felt and experienced. Another opportunity lies in the ability to hyper personalise promotional content as one-size-fits-all promotions are becoming less effective in a world craving personalization. WebAR, leveraging AI and data analytics, can customize promotional experiences in real-time. For example, a user with a history of buying eco-friendly products might encounter a WebAR ad that emphasizes a product's sustainable attributes, with virtual demonstrations of its eco-friendly processes.

Traditional product launches or promotional events have geographical and logistical constraints. WebAR democratizes access, allowing consumers, regardless of their location, to join virtual product launches. Within this virtual space, users can interact with the product, ask questions in real-time, and even engage in virtual networking, replicating the richness of physical events. Influencers can also use WebAR to provide their audience with enhanced content. Beyond just showcasing a product, they could offer a WebAR experience where followers virtually use the product alongside them. This not only boosts the influencer's content quality but also enhances the user's ability to relate to and trust the promotional message.

Simple ads can be forgettable, but experiences, especially those that challenge and engage users, leave a lasting impression. Brands could design WebAR-based quests or challenges. For instance, a fashion brand might create a virtual wardrobe hunt, where users find and virtually try on outfits, earning rewards for their engagements. They can also be used for data driven optimisations, considering traditional promotions only offer limited post-campaign analytics. WebAR, being a digital medium, provides granular insights into user behaviour. Every interaction, be it time spent on an ad or areas of maximum engagement, can be tracked, allowing brands to refine their promotional strategies in real-time for maximum efficacy. All the above mentioned opportunities can also be hyper realised since WebAR also offers seamless integration with social media. The experiential nature of WebAR promotions makes them prime content for sharing on social media. A user's unique interaction with a WebAR ad can be shared, allowing peers to not just view, but also engage with the promotional content. This user-generated promotion amplifies the brand's reach and lends an organic authenticity to the promotional message. In summary, WebAR doesn't just amplify the "Promotion" pillar of marketing; it revolutionizes it. By fostering active engagement, personalizing experiences, and blending the real and virtual seamlessly, WebAR is poised to set new standards in how brands communicate, engage, and persuade in the digital age.

3. State of current research and future research

WebAR has seen use in studies of how AR drives cognitive, affective and behavioural consumer responses (Jeganathan, Szymkowiak, 2023), in creating educational tools (Cortés Rodríguez, Dal Peraro, Abriata, 2022), for Scene Text Recognition, Visualization and Reading to Assist Visually Impaired People (Ouali, Halima, Wali, 2022) as well for Development of career guidance quests (Shepiliev et al., 2021). It also seems to have been used for assistance in learning intangible cultural heritage (Tan, Hills, Ji, Feng, 2020) as well for bridging knowledge between craftsman and learner in Chinese intangible cultural heritage (Tan, Ji, Hills, Fu, 2019). The technology also appears to have been used in creating Information Visual Tool (Tan et al., 2019), creating a traditional kite art platform based on human-computer interaction (Li et al., 2021) and even for the development of training system for dental treatment (Kudo, Okada, 2021). Other learning related uses of WebAR include creating platforms for traditional handicraft learning (Ji, Tan, Hills, 2020; Ji, Zhou, Tan, Fu, 2019). Practical usage of WebAR is visible in campaigns such #BringHalloweenHome from McDonalds (Williams, 2020), #Refreshwherevs from Coca-Cola (Murphy, 2023) and Jumanji (Bäkvall, 2022).

In concluding an article on utilizing WebAR for navigating organizational crises, there are multiple avenues for further research. The transformative potential of WebAR in reshaping the classical 4Ps of marketing — Product, Price, Place, and Promotion — is becoming increasingly apparent. Yet, as is customary with emergent technologies, there's a myriad of facets that necessitate deeper scholarly inquiry to unravel its all-encompassing implications. Preliminary insights into consumer interactions with WebAR, especially within promotional frameworks, are illuminating. However, a more exhaustive exploration is needed to discern nuanced behavioural patterns, engagement metrics, and the subtle shifts in decision-making processes that WebAR might induce. Equally compelling is the need to dissect WebAR's influence on pricing strategies. Does the immersive nature of WebAR alter a consumer's perception of value, or does it impact their willingness to pay? Can WebAR facilitate dynamic, real-time pricing models that recalibrate prices based on instantaneous demand or user engagement?

Moreover, as WebAR hints at redefining the 'Place' pillar of marketing, scholars ought to probe deeper. How might virtual storefronts or augmented showrooms stack up against the allure of traditional online shopping or the tactile experience of brick-and-mortar stores? And as brands navigate the intricate balance between global reach and local resonance, how can WebAR be harnessed to cater to both broad, universal campaigns and hyper-localized marketing thrusts? Furthermore, with digital frontiers expanding, ethical considerations loom large. WebAR's intersection with user privacy, data security, and broader ethical dilemmas demands rigorous academic scrutiny. Brands stand at the precipice of harnessing vast data troves via WebAR, but how can they strike the delicate balance between leveraging insights and respecting user privacy?

Beyond this, the convergence of WebAR with other avant-garde technologies — think AI, IoT, and blockchain — unveils a plethora of exhilarating prospects. The symbiotic relationships between these technologies and their collective impact on marketing paradigms are territories rife for exploration. And as organizations earmark substantial capital towards WebAR endeavours, the quest for precise metrics and definitive ROI frameworks intensifies. How can the efficacy of WebAR campaigns be quantified, and what benchmarks might define success? Lastly, the long arc of brand-building beckons investigation in the WebAR age. While early indications suggest WebAR’s prowess in amplifying brand loyalty and equity, sustained studies spanning longer durations are imperative to cement these hypotheses.

4. Conclusion

The digital age continues to shape and influence the world of marketing, with WebAR emerging as a significant technological advancement. This review has critically assessed the profound impacts of WebAR across the foundational 4Ps of marketing: Product, Price, Place, and Promotion, as per its research aim. Through WebAR, products can be presented in immersive and interactive ways that were previously unattainable, offering customers a richer understanding of what they're purchasing. When it comes to pricing, WebAR has the potential to modify how customers perceive value, nudging brands to revisit and potentially innovate their pricing models. In addressing 'Place', WebAR offers an interesting shift, providing opportunities to reach broader audiences without the limitations of physical locations. As for 'Promotion', the technology stands as a potent medium, enabling brands to communicate more effectively and engage consumers in novel ways.

However, it's important for businesses to implement WebAR thoughtfully. Its integration should be aligned with a brand's overall marketing strategy, ensuring it adds value rather than complicating the user experience. Moreover, the ethical and privacy concerns associated with digital technologies, WebAR included, must be rigorously addressed. Brands need to responsibly manage and utilize the data they gather, maintaining trust with their user base. While this review has provided a comprehensive overview, it's clear that the possibilities and implications of WebAR in marketing are vast and still evolving. Continuous research and exploration are essential to stay abreast of the technology's potential and challenges. In summary, WebAR represents a significant shift in the way brands can interact with their audiences. It's more than just a new tool—it's an opportunity to redefine and enhance the marketing mix for the digital age. Brands that strategically integrate WebAR into their approach will likely find themselves better equipped to meet the needs and expectations of modern consumers.

Project funding

This research was funded in whole by PRELUDIUM programme of the National Science Centre, a government agency, supervised by the Ministry of Science and Higher Education, years 2022–2025, grant no. 2021/41/N/HS4/02462, financing 199,712 PLN. For the purpose of Open Access, the author has applied a CC-BY public copyright licence to any Author Accepted Manuscript (AAM) version arising from this submission.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2023
ORGANIZATION AND MANAGEMENT SERIES NO. 192

ROLE OF PUBLIC TRANSPORT IN THE DEVELOPMENT OF CITIES AND REGIONS

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Purpose: The aim of this article is to examine if there is a correlation between the level of prosperity of Polish regions and their transport network.
Design/methodology/approach: Literature studies were carried out, statistical data were analyzed, as well as selected case studies.
Findings: There is a clear correlation between regions GDP and their transport network.
Research limitations/implications: The author also sees interesting directions for further research in the future – related to the interconnection of macroeconomic and transport indicators.
Practical/social implications: With the rapidly increasing level of motorization, the question of the efficiency of public transport is returning. While the role of public transport in urban centres is undisputed, it is much more difficult for agglomeration, metropolitan and regional transport to organise an efficient (cost and spatial) transport network. Thus, many questions arise: about the way of organising transport at the local government level or the possibility of financing. The author reviews two key public transport sub-systems: regional rail and air transport, and analyses the basic data on regional development, looking for interconnections.
Originality/value: An attempt to link economic indicators (GDP level) with transport indicators (infrastructure use, passenger transport statistics).
Keywords: public transport, regional development, GDP, rail transport.
Category of the paper: Research paper.

1. Introduction

Public transport is often seen as the "bloodstream" of cities and agglomerations. Similarly, for regions, an efficient public transport network fosters economic development. On the one hand, public transport can be seen as a factor in the development of regions, on the other hand, the development of public transport (as a public service with an important social role) may be an effect of the economic development of the whole region.

Today, because of the rapid increase of private cars use, the main question of the public transport efficiency is returning. While the role of public transport in urban centres is undisputed, it is much more difficult for agglomeration, metropolitan and regional transport to organise an efficient (costly and spatially) transport network. Thus, many questions arise: about the way of organising transport at the local government level or the possibility of financing. The author reviews two key public transport sub-systems: regional rail and air transport, and analyses the basic data on regional development and competitiveness, looking for connections.The main aim of this article is to examine if there is a correlation between the level of prosperity of Polish regions and their transport network. In this reason literature studies were carried out, statistical data were analyzed, as well as selected case studies. The main questions asked by author are: is it possible to link economic indicators (GDP level) and transport indicators? And is there a correlation between economic indicators and transport indicators like infrastructure use or passenger transport statistics? This link between both groups of indicators is a result of the article.

2. Tasks and functions of public transport

Transport (and mobility) serve other human needs. However, the effect of accelerating the speed of life and increasing human activity is a change in the range of movements – especially the lengthening of transport routes (Mężyk, Zamkowska, 2019, pp. 14-15). As mobility needs increase, the question arises as to whether it can be provided. And public transport (as a public service) should also fulfil a social function by ensuring that transport services are accessible to all concerned, regardless of social status or financial means. From an economic point of view, public transport does not provide an opportunity to fully introduce a free market economy – hence subsidising these services as an element of support balancing the implementation of transport at lower prices than the free market (Wyszomirski, 1997).

In this paper, the author focused on the issue of rail transport. However, you should also remember about regional bus transport. As early as 1989, the companies of the State Motor Transport (Przedsiębiorstwa Komunikacji Samochodowej – PKS) held a practically monopolistic position in non-urban bus transport. In a market economy, they had to undergo the necessary transformation, which many times ended with attempts at privatisation, communalisation and often final liquidation. Of 182 entities providing such transport services, 86 had ceased their activity by the end of August 2022 (Ciechański, 2023). The purpose of this publication is not to analyse in detail the changes in the field of bus services, but it is worth to point out that their role has diminished considerably. In practice, this means that for many areas, following the reduction of bus services, there is a real risk of traffic exclusion. And rail transport, due to natural constraints (high investment costs and long implementation times for investment projects), is not able to ensure full accessibility (even assuming the optimistic assumption of full availability of funds).

In view of the diminished role of bus transport in recent years, the focus has therefore been on rail and air transport. Rail and air transport require specific infrastructure and therefore high capital outlays. And this capital intensity (both in terms of investment and maintenance) means that it is necessary to maintain an adequate level of financing. And bus transport, as having much lower barriers to entry into practice, can be implemented much faster, according to current needs – which explains the presence on this market also of private entities, reacting dynamically to changes in demand (but also providing transport services where it is financially justified).

An additional component of the public transport network is all personal transport equipment (Urządzenia Transportu Osobistego – UTO). They provide valuable support for the entire transport network in terms of reaching the last mile. In non-urban areas, this means long-established commuting (for example by bicycle) to the points of intersection with the public transport network. They also make it possible to reduce the inconvenience associated with the so-called traffic exclusion. It should be noted that the closure of connections increasingly affects the inhabitants of larger cities as well – there are also centres of several tens of thousands inhabitants – Lubin, Łomża, Mielec or Bełchatów (Kaczorowski, Misiaszek-Przybyszewski, 2018).

Among the basic legal acts that determine the functioning of public transport is the Public Transport Act (Public transport act, 2022), which defines, among other things, who is responsible for organising public transport and in what area. These are often local authorities and a more detailed breakdown by area is given in the table below.

Table 1.
Public transport organisers

Area of activity	Contractor of transport services
Municipality	Mayor of the city
Intermunicipal Association	Board of the Intermunicipal Association
District	Mayor of the district
Association of districts	Board of accociation of districts
District-Communal Association	Board of the district-communal association
Metropolitan Union	Board of the Metropolitan Union
Voivodship	Marshal of the Voivodship
Inter-province and international rail transport	Minister with responsibility for Transport

Source: (Public transport act, 2022).

It should be noted that the regulations on entrusting the organization of public transport to local governments are not new – they have been present for many years, including in the Act on municipal, local government. According to the Act on Public Transport, the tasks indicated in the above table of organizers include (in accordance with Article 8 of the Act) primarily: planning the development of transport; organising public transport; managing public transport. The organizer also has the possibility to establish an integrated tariff and ticket system valid within its borders (Public transport act, 2022). Analyzing the transport problems of the regions, it should be noted that the responsibility for organizing transport within the voivodship lies with the Marshal of that voivodship. And this later forms the basis for the development of railway companies established for specific areas by the local authorities of the certain voivodships.

Public transport today faces many problems, one of which remains the financial condition of local governments. The high inflation rate (with a peak of 17.9% year-on-year in October 2022) (GUS, 2022) puts a high pressure on wages, which are one of the main cost elements of transport services. The loss of revenues of local governments may also be critical, resulting from changes in the scope of personal income tax – according to the Association of Polish Cities (Związek Miast Polskich – ZMP, 2023), these losses will be counted in billions of PLN, and the largest cities will lose the most.

3. Development of regional transport – rail transport by regions

Investments in rail transport can be a source of pro-development consequences in the economic dimension – for example, the elimination of disparities in development resulting from spatial regulations can be a source of increased mobility of residents, better access to jobs, schools or social services, activating residents, as well as a source of investment attractiveness (Bul, 2014). It should be noted that the transport organizer, having an impact on the shape of the transport network at the level of the voivodship, also has a real impact on the development of selected areas. At the same time, it has the financial means not only to maintain the network but also to develop it. Combined with investment measures, it can stimulate the development of selected areas by developing infrastructure and launching new transport links. Of course, in the case of rail transport, this is a time-consuming process, but it is not impossible.

The strategy of "reconstruction" of the railway network is clearly visible in the Dolnośląskie Voivodeship. In June 2019, trains returned to Lubin and Bielawa (after 40 years), in December 2019, the revitalization of the line from Lubin to Głogów was completed. In 2022 a connection was launched on railway line No. 285 from Wrocław to Świdnica via Sobótka (trains did not run there for 22 years). In the same year combined bus-rail services were introduced on the route to Stronie Śl. and Lądek-Zdrój (with a changeover, but on one, common ticket). In December 2022 trains returned to Chocianów (also after a 22-years), and in the coming months (2023-2024) trains are scheduled to return to Jedlina Zdrój, Świeradów-Zdrój and Karpacz (KD, 2023).

4. Public transport as a factor of development and effect

The phenomenon under analysis should be viewed from two perspectives. On the one hand, transport (transport infrastructure) can be considered as a factor of regional development – such an approach is consistent with the results of both Polish (Koźlak, 2012; Burnewicz, 2013; Majewski, 2021; Rosik, 2021) and global authors (Gauthier, 1970; Polyzos, Tsiotas, 2020; Rietveld, Nijkamp, 1992). At the same time, it should be taken in mind that the largest share of the economic power of regions is often the urban centres themselves. However, cities as areas with the highest concentration of population and activity are often areas with the highest concentration of problems: economic, social, technical and other (Domański, 2006). Thus, the connection between the city and the region becomes crucial – which gives the opportunity for full and harmonious development. Progressive suburbanisation makes it necessary today to talk not about the problems of cities, but about the problems of agglomerations, metropolises or whole regions. It is not possible to organise a transport network in isolation from the ongoing social or economic changes.

The analysis of the development of regions can be made based on the growth rate of the national economy – determining the changes in the size of this data and the distribution of growth between regions (Domański, 2006). It therefore makes sense to analyse, for example, indicators of the level of GDP. At the same time, it is worth noting that in cities and agglomerations, public transport development policy means creating conditions for efficient movement of people and goods, but taking into account not only transport accessibility but also the environmental factor (Rydzkowski, 2017). Environmental issues are among the most important factors in the organisation of urban transport. Apart from cities, others dominate – first of all, ensuring adequate transport accessibility and attractive transport offer. Strictly environmental issues are analysed in a slightly different way – there is not so much pressure, for example on zero-emission vehicles. What does not change the fact that new power sources are an interesting area of research also in urban transport, as well as in the fleets of Polish carriers you can find hybrid vehicles.

5. Development of regional trains managed by local government

Analyzing the rail transport market, it should be noted that the most serious side effect of transferring responsibility for rail transport to the barge of voivodship self-governments was a worsening of the offer on sections crossing the borders of voivodships (Trammer, 2019, pp. 144-145). The companies established by the marshals focused (obviously) on transport within their areas. And the organization of transport has become problematic especially at the junction of voivodships or when a given railway line crosses an additional voivodship. And such examples can be observed on the railway network – for example, on railway line No. 351, which connects Wielkopolska (Poznań) with zachodniopomorskie voivodship (Szczecin) and runs in a small part through lubuskie voivodship (Dobiegniew and surroundings). The challenge is also to service connections operated in the regional railway standard, but with longer connections, which are de facto the responsibility of the marshals of two or more voivodships (in the case of wielkopolskie and zachodniopomorskie voivodships, this applies to the connections Poznań – Szczecin/Świnoujście and Poznań – Szczecinek/Koszalin/Kołobrzeg).

In Poland, there are ten so-called local government carriers, affiliated to the Union of Local Government Railway Carriers. These are (in alphabetical order): Arriva RP, Koleje Dolnośląskie, Koleje Małopolskie, Koleje Mazowieckie, Koleje Śląskie, Koleje Wielkopolskie, Łódzka Kolej Aglomeracyjna, SKPL Cargo, Szybka Kolej Miejska, Warszawska Kolej Dojazdowa (ZSPK, 2023). The field of activity of these entities is shown in Figure 1.

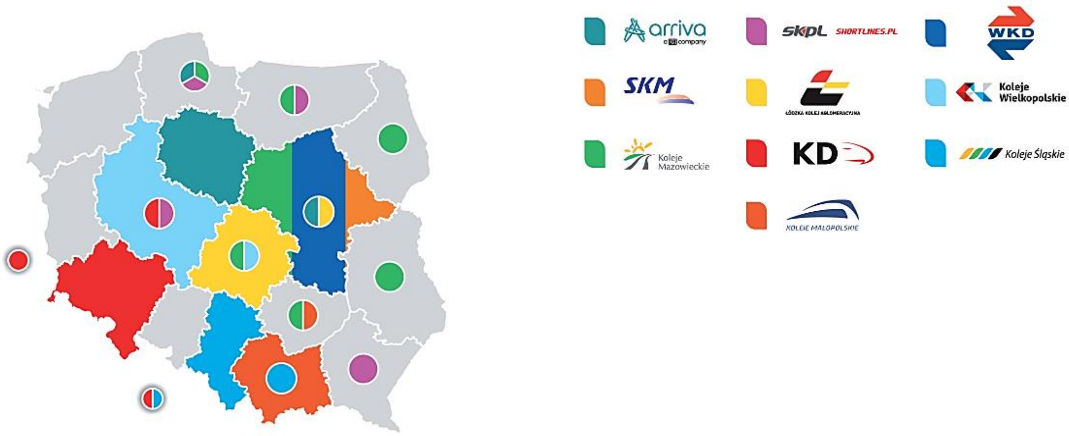

Figure 1. Local government carriers in Poland.
Source: (ZSPK, 2023).

The chart below (Figure 2) shows the share of local government carriers in transport on the Polish market for the period from January to December 2020 (UTK, 2023). These statistics show the scale of activity of individual companies.

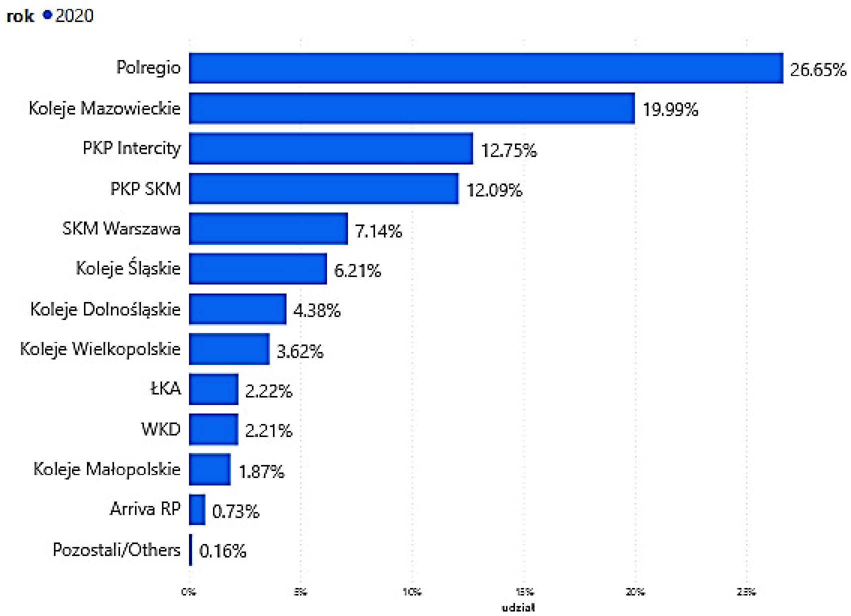

Figure 2. Share of carriers by number of passengers, January - December 2020.
Source: (UTK, 2023).

It should be noted that transport by local government companies has already become a key area of the railway market. ZSPK data (2022) show that carriers affiliated to ZSPK carried 154.4 million passengers in 2019 – which represents 46% of the total railway market in Poland (see Figure 3).

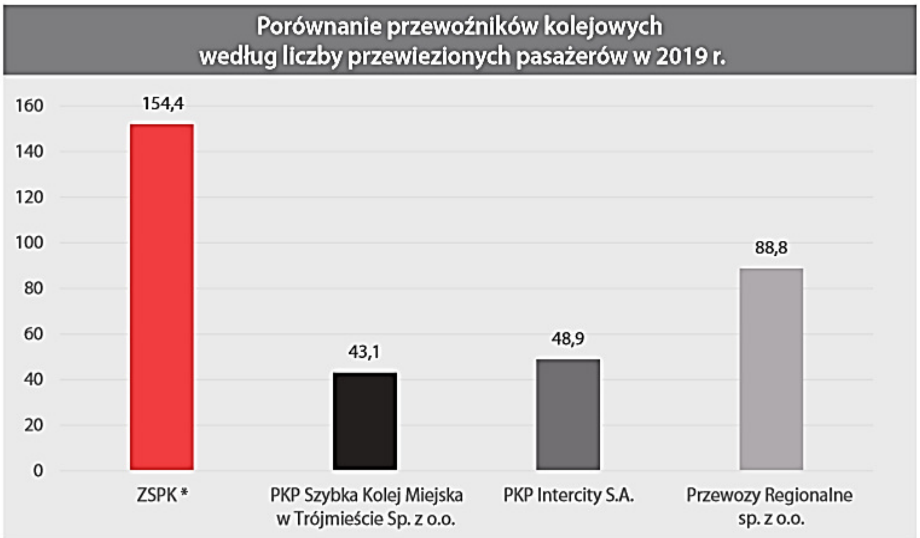

Figure 3. Comparison of railway companies by number of passengers carried in 2019.
Source: (ZSPK, 2022).

It is worth noting the "new quality" introduced to the market of railway services by local companies. Starting their activity practically from scratch, very often with the vocation of life they made purchases of new rolling stock. Thus, local government operators today very often have new or several-year-old rolling stock, less often thoroughly modernized – which has significantly contributed to raising the standard of agglomeration or regional service. The regional railway was no longer identified with obsolete electric units of the EN57 series, and a number of new series of vehicles appeared in the fleet of carriers, both domestically produced (PESA, Newag) and from foreign suppliers (Bombardier, Stadler). It is also very important, that local government companies rely to a large extent on domestically produced rolling stock (PESA, Newag, Stadler), which has a measurable effect on the development of the domestic rail vehicle production market, building competencies in this field, investments and development of Polish manufacturers and their suppliers.

Of course, this is only the beginning of building a long-term strategy for the development of rail transport in Poland and local government carriers are facing many challenges. Among the challenges associated with the construction of local government railways, issues related to common ticket, implementation of transport at voivodships borders and integration of rail and bus transport are identified (Górny, 2016).

6. The role of air transport in building regional development

European experience shows that air and rail transport can create efficient transport solutions (Huderek-Glapska, 2010). Access to this type of infrastructure is one of the criteria affecting the competitiveness of the economy and investment attractiveness of a given region (Truskolaski, Busłowska, 2011, p. 46). From the perspective of the city, air transport plays many important roles. In addition to the obvious increase in transport accessibility, it allows to build attractiveness on the international arena, thus influencing the acquisition of foreign partners and expanding cooperation, which means both the organization of international events and new investments. It is therefore the basis for long-term development. It is important to be aware that air transport can also be a source of risks and that the positive impact of an airport on the environment may result, among other things, from the limited capacity of the infrastructure – reducing the demand for air services, as well as the effects of the airport – economic and social (Olipra, 2010).

In six Polish cities, rail connections have been launched allowing access to airports also by rail. In selected locations, through the combination of railway investments and road solutions (highways, bus connections) it is possible to talk about the development of multimodal hubs (Pijet-Migoń, 2020). It should be noted that for European airports, intermodality, understood as communication within both road and rail networks, is the standard (Koźlak, 2011).

7. The use of rail transport and the prosperity of the regions

The aim of this publication was to examine if there is a correlation between the wealth of regions and their transport indicators. The data provided by the Central Statistical Office (CSO) in the Local Data Bank (GUS, 2023a) were first taken into account. In particular, data related to the operated infrastructure – railway lines of different categories were analysed. It was decided to take into account the basic indicator – standard-gauge railway lines (without entering into whether they are single- or multi-gauge lines, as well as electrified lines). These data were compared with UTK data concerning the implementation of railway transport in individual voivodships. The bulletins "Railway in voivodships 2022" (UTK, 2023) were analyzed for all sixteen voivodships. These reports included, among others, the number of passengers (in each voivodship) and the rate of rail use (calculated as the ratio of the number of passengers checked in at stations (boarding and disembarking persons) during the year and the number of inhabitants in a given voivodship) (UTK, 2023b). Comparing these two sets of values, an indicator named by the author "Efficiency of infrastructure use" was introduced – as a quotient of the number of passengers carried (millions) and the length of the operated railway network (km).

The analysis of the level of wealth was based on the GDP index. Data on GDP by region are available from the Central Statistical Office (GUS, 2023b). The data presents both absolute and per capita GDP. For the purposes of analysis (and consistency with other data), the values for mazowieckie voivodship were summed up (the Warsaw region and the rest of the voivodship are presented separately in the GUS statistics). The most recent data was for 2021.

The "Efficiency of infrastructure use" indicator was compared with the level of GDP in the regions. The table below shows the previously indicated values. The highest values are indicated in yellow. It should be noted that there is a clear correlation – the level of use of rail transport infrastructure was much higher in the wealthiest voivodships. In this statistics seven voivodships have much higher scores: dolnośląskie, łódzkie, małopolskie, mazowieckie, pomorskie, śląskie and wielkopolskie. It should also be noted that these are voivodships where local and/or metropolitan railways are the most developed, and practically all such carriers operate on the territory of these voivodships (the previously mentioned voivodships and Szybka Kolej Miejska in Tricity), apart from these seven voivodships there are also two other regional carriers – SKPL and Arriva.

Table 2.
Summary of the extent of rail transport performance from the GDP of regions

Voivodship	Railway lines in operation [km]	Number of rail passengers in region [pas]	Efficiency of infrastructure use [million lanes/km lines]	GDP by region [2021, PLN million]
Polska	19 394	245 060 701	12 635,90	2 631 302
dolnośląskie	1 804	22 690 619	**12 577,95**	**222 670**
kujawsko-pomorskie	1 199	6 242 637	5 206,54	114 909
lubelskie	1 097	3 450 539	3 145,43	97 523
lubuskie	914	2 996 747	3 278,72	56 102
łódzkie	1 080	11 400 670	**10 556,18**	**159 665**
małopolskie	1 080	12 792 481	**11 844,89**	**215 847**
mazowieckie	1 726	74 015 456	**42 882,65**	**593 814**
opolskie	784	3 633 106	4 634,06	53 994
podkarpackie	985	3 826 401	3 884,67	101 498
podlaskie	762	1 721 537	2 259,23	58 369
pomorskie	1 214	46 692 418	**38 461,63**	**157 785**
śląskie	1 868	19 303 571	**10 333,82**	**314 500**
świętokrzyskie	727	2 686 438	3 695,24	60 381
warmińsko-mazurskie	1 091	3 916 953	3 590,24	67 755
wielkopolskie	1 892	21 965 231	**11 609,53**	**259 958**
zachodniopomorskie	1 171	7 725 897	6 597,69	96 531

Source: own work based at (GUS, 2023a, 2023b), (UTK, 2023).

Several conclusions can be drawn from the analysis of the table. It is clearly visible in which voivodships both the efficiency of infrastructure use and GDP are highest. These provinces are marked in color. The Pearson correlation coefficient for the two datasets is: $r = 0.748$. It is high, confirming the correlation between the indicated data. At the same time, it should be noted that the level of statistical significance (p-value) is low, with $p < 0.001$, less than the accepted typical value of the significance level $\alpha = 0.05$. Correlation analysis is therefore statistically important. In search of answers to the questions, author also analyzed subsets of data from the above table. However, the partial analyses (separately for the regions with the highest and lowest values) gave less satisfactory results (r between 0.48 and 0.52, p-index between 0.19 and 0.23). It suggests that this direction of study is not appropriate. Therefore, the analysis of regional data turned out to be meaningful only if it was carried out in a complete way (for all voivodships).

Such a high result of selected voivodships shows that it is possible today to attract passengers to regional railways. On the other hand, two voivodships with companies to operate a typical agglomeration railway dominate – although it is not so evident in the statistics of the mazowieckie voivodship (the share of SKM in the number of passengers carried is about 11%), in the case of the pomorskie voivodship this share is significant (PKM SKM carries about 70% of passengers throughout the voivodship). Regardless, even if agglomeration carriers are excluded from the statistics, there is a clear dominance in the statistics of those voivodships, which have strongly developed their own structures for railway transport.

8. Air transport and regional prosperity

In a similar way, the level of GDP of voivodships was compared with the scale of air transport (passenger). Regional airports in most cases correspond to the arrangement of voivodships, with the exception of opolskie, podlaskie, świętokrzyskie voivodships (which do not have their own airports) and mazowieckie voivodship (which has as many as three – in addition to Warsaw Okęcie airport also Warsaw Modlin and Radom Sadków airports – the last one, however, did not check in a single passenger in 2022). Again, a clear correlation was observed – a much higher number of checked-in passengers was found in the voivodships with the highest GDP: dolnośląskie, małopolskie, mazowieckie, pomorskie, śląskie and wielkopolskie. The exception is łódzkie voivodship – despite the relatively high level of GDP – sixth in the country, in terms of the number of checked-in passengers, Łódź Airport occupies only twelfth place. However, low interest in transport from this airport has persisted for years and is related to the proximity of a wide range of transport services offered by Warsaw airports. The table below shows the regions and airports with the number of passengers carried and the level of GDP.

Table 3.
Summary of the scale of air transport performance from the GDP of regions

Voivodship	Airport name	Number of passengers transported (2022)	GDP by regions [2021, in PLN million]
dolnośląskie	Wrocław - Strachowice	**2 868 012**	**222 670**
kujawsko-pomorskie	Bydgoszcz	247 008	114 909
lubelskie	Lublin	328 516	97 523
lubuskie	Zielona Góra - Babimost	41 543	56 102
łódzkie	Łódź	179 926	**159 665**
małopolskie	Kraków Balice	**7 386 496**	**215 847**
mazowieckie	Warszawa (Lotnisko Chopina + Modlin + Radom)	**17 514 087**	**593 814**
opolskie	brak		53 994
podkarpackie	Rzeszów - Jasionka	683 299	101 498
podlaskie	brak		58 369
pomorskie	Gdańsk im. Lecha Wałęsy	**4 559 480**	**157 785**
śląskie	Katowice - Pyrzowice	**4 406 241**	**314 500**
świętokrzyskie	brak		60 381
warmińsko-mazurskie	Wrocław - Strachowice	**2 868 012**	**222 670**
wielkopolskie	Bydgoszcz	247 008	114 909
zachodniopomorskie	Lublin	328 516	97 523

Source: own work based at (GUS, 2023b), (ULC, 2023).

The above table shows, similarly to the comparison of rail transport, that in voivodships with higher level of prosperity the scale of air transport is significantly higher. As with previous data, a correlation analysis was conducted. The correlation coefficient for these two datasets was even higher, and reached: $r = 0.921$. It is very high, confirming the correlation between the indicated data. At the same time, it should be noted that the level of statistical significance (p-value) was again low ($p < 0.001$), less than the accepted typical value of the significance level $\alpha = 0.05$. The correlation analysis thus proved to be statistically significant.

The author also reanalyzed selected subsets of data from the table above. Partial analyses were conducted, among others, omitting regions without their own airports (obtaining results: $r = 0.918$ and $p < 0.001$) or omitting nazowieckie and łódzkie regions (as potentially unreliable, $r = 0.763$ and $p = 0.00149$). After eliminating from the set of data regions without airports, mazowieckie and łódzkie the results were: $r = 0.713$ and $p = 0.137$. The analysis of partial data has therefore again proved to be of limited usefulness. Although it allowed to notice additional dependencies – voivodships without airports (opolskie, podlaskie, świętokrzyskie) did not have a major impact on the correlation assessment, but łódzkie and mazowieckie voivodships did. Especially the mazowieckie voivodship, which definitely dominates the other regions in terms of GDP and the number of passengers checked in. Which does not change the fact that even after it was excluded from the analysis, the correlation coefficients were characterized by high positive levels. Therefore, it should be considered that correlation is therefore very clear.

9. Summary and conclusions

The article presented the basic tasks and functions of public transport, as well as the directions of change and development of public transport with regard primarily to rail and air transport. This was the starting point for answering the question: does the development of these two modes of transport correlate with the development of the regions? A review of the literature shows that the links between air transport development and regional development are relatively more often the subject of research by researchers. Air transport is seen as an investment in point infrastructure (airport and accompanying ground infrastructure) and the benefits of its presence are high and measurable. On the other hand, rail transport, as widely available in many locations, is less often an area of interest for research analysing regional development.

A comparison of GDP data for individual voivodships with data on the number of passengers carried by regional rail and the number of passengers departing from airports shows that the highest number of passengers for both modes of transport was recorded in the wealthiest voivodships. Thus, this confirms the thesis on the pro-development role of railway infrastructure and air transport infrastructure pointed out in the literature. At the same time, it allows to justify investments in railway transport carried out at the level of voivodship self-government – both related to the implementation of transport at the operational level and investment activities: purchase of rolling stock or financing (from funds under the responsibility of voivodship marshals).

Author managed to find a connection between transport and economic indicators – fulfilling the main objective of the article and answering the question posed. There is a clear correlation between regions GDP and their transport network. However, it should be clearly noted that the correlation analysis does not answer the question, which one is the cause and which one is the effect. It only shows the correlation between two sets of data.

Author also sees interesting directions for further research in the future – related to the interconnection of macroeconomic and transport indicators. Can this data be analysed at the lover, municipal level or by counties? What other indicators can be included here? Does the correlation analysis allow to assess the transport policy of voivodships (its legitimacy, correctness, directions?) How would the analysis be influenced by taking into account other fields of public transport (for example bus regional transport)? Or by adding a historical context (historical division and barriers)? The analysis allowed the author to ask many new questions, setting potential directions for further research.

Another area for expanding the area of research indicated here concerns funding models. It should be borne in mind, however, that both of these modes of transport require a high level of expenditure, which is easier for the more prosperous regions to bear. In addition, not all regions have sufficiently large passenger flows, which, especially in the case of air transport, has led to a lively debate on the advisability of maintaining some regional airports. Going further, it is also possible to discuss the relationship between the indicators of the use of individual modes of transport and the average population of individual voivodships. In voivodships with a lower population density, the rail transport operations naturally becomes less efficient. On the other hand, smaller voivodships (by area) do not have to be excluded from transport without having their own transport structures. All this makes the interconnection of regional prosperity with the transport infrastructure maintained and the transport service offered an interesting area of research.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

RESPONSIBLE RESEARCH AND INNOVATION (RRI) IN REGIONAL INNOVATION STRATEGIES (RIS) – RELATED PRACTICES IN THE POLISH INNOVATION ECOSYSTEM

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Purpose: The purpose of the paper is to investigate and identify the RRI (Responsible Research and Innovation) related practices within the Polish innovation ecosystem.
Design/methodology/approach: The article uses the analysis of regional strategic documents which are regional innovation strategies of provinces of Poland. Key words related to the assumptions of RRI were identified, and a congruence analysis of their meaning was conducted. This enabled the creation and presentation of quantitative summaries of the identified and verified concepts included in the strategy documents.
Findings: The analysis conducted shows limited presence of the RRI concept in Polish regional innovation strategies. In detail, the frequency of the occurrence of individual concepts in the aggregate and regionally was shown. Those components of the RRI that generally did not occur in the analyzed documents were pointed out. In the methodological layer, the challenges relating to the conducted study and methods of overcoming them were presented.
Research limitations/implications: For reasons of completeness, the authors decided to use in the analysis the strategic documents of Polish provinces relating to the period 2011-2020. Some Polish regions have not prepared documents for the period 2021-2030 (Podlaskie province) or strategic documents were developed immediately for the period 2011-2030 and have not yet been updated (Łódź, Pomeranian, Warmian-Masurian provinces).
Practical implications: The results of the study indicate areas that should be completed when updating regional innovation strategies.
Originality/value: The paper presents the results of the first analysis of the compatibility of planned activities in regional innovation strategies with the RRI. The article proposes and tests a methodology that can be used to analyze documents of subsequent periods, and is a basis for further improvements.
Keywords: responsible research and innovation, regional innovation strategies.
Category of the paper: research paper, general review.

1. Introduction

Responsible Research and Innovation (RRI) was introduced as a term used by the European Union within its Framework Programmes. It is used for describing research and innovation processes potential impact on the environment and society (Von Schomberg, 2013; European Commission, 2013; Zwart et al., 2014; RRI Tools Consortium, 2016). Therefore Responsible Research and Innovation (RRI) anticipates and assesses potential implications and societal expectations concerning research and innovation, intending to foster their design as inclusive and sustainable.

According to current studies undertaken within H2020 projects (such as TeRRItoria, http://territoriaproject.eu/ or FIT4RRI, https://fit4rri.eu/) the practical implementation of the Responsible Research and Innovation (RRI) can be demonstrated by the presence of RRI related practices in innovation policy documents implemented on various levels (local, regional and national).

In order to observe the current level of Responsible Research and Innovation (RRI) we are going to analyse one of the main instruments used for shaping the innovation policy on the regional level in Poland, namely regional innovation strategies. Regional innovation strategies are integrated, place-based economic transformation agendas. In the context of Europe 2020 strategy, they are focused on: (1) policy support and investments on critical regional priorities, challenges and needs for knowledge-based development, (2) building region's strengths and competitive advantages, (3) supporting technological as well as practice-based innovation, (4) getting stakeholders fully involved and encourage innovation and experimentation (Foray et al., 2012). RIS are characterised as evidence-based and they include sound monitoring and evaluation systems. In each of the 16 Polish regions, the regional innovation strategy has been adopted and implemented.

2. Responsible Research and Innovation (RRI)

Responsible Research and Innovation (RRI) is gaining raising recognition in academic literature and research practice within the European Union (EU).

RRI was included as a part of the EU Framework Programmes. In the 6th Framework Programme, where the term "responsible research" appeared for the first time, replacing the Ethical, Legal and Social Aspect (ELSA) framework for guiding research policy on emerging sciences and technologies (Zwart et al., 2014). "Responsible research and application of science and technology" has been used to describe the requirements for cooperation between various bodies to foster dialogue in a global context and research on ethics of science and technology (Burget et al., 2016).

The term "Responsible Research and Innovation" was next used in the 7th Framework Programme (Regulation (EU) No 1291/2013, 2013) and grounded in Horizon 2020, emphasising cooperation between societal actors (researchers, citizens, policymakers, business, third sector organisations, etc.) working together during the whole research and innovation process in order to align better both the process and its outcomes with the values, needs and expectations of society.

RRI is also planned to be included in the Horizon Europe, the EU research framework programme succeeding Horizon 2020, where it is going to further promoted in the Science-with-and-for-Society (SwafS) actions.

Following the interest in RRI promoted by the European Commission, especially in the recent years (2016-2020) there have been several literature studies exploring this topic (Burget et al., 2016; Carrier, Gartzlaff, 2019; Jakobsen et al., 2019; Loureiro, Conceição, 2019; Schuijff, Dijkstra, 2020; Fraaije, Flipse, 2020). The scholars argue that (1) RRI is "a relatively immature, narrow area of inquiry that takes a topdown perspective and relies on standardised principles about public governance of research and innovation" (Jakobsen et al., 2019); (2) "Although the concept of RRI occurs in different institutional documents and research publications, its definition and dimensions still lack clarity" (Owen et al., 2012; Burget et al., 2016); (3) "the concept of RRI is vague and undefined" (Rip, 2014; Zwart et al., 2014; Loureiro, Conceição, 2019).

Nevertheless, one of the first attempts to define RRI (being at the same time most frequently mentioned in the cited papers) is the one by von Schomberg (2011), in which Responsible Research and Innovation is defined as "a transparent, interactive process by which societal actors and innovations became mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (to allow a proper embedding of scientific and technological advances in our society)." (von Schomberg, 2011).

The foundation underpinning the concept of Responsible Research and Innovation are six key dimensions recommended by the Rome Declaration (2014), namely: public engagement, gender equality, science education, open access (open science), ethics and governance. However, similarly, as in the concept of RRI there is no consensus concerning these dimensions as well, as some EU documents (European Commission, 2015) refer to eight dimensions, adding to the six mentioned above: sustainability and social justice/inclusion. Furthermore, there are studies, employing a different approach and identifying four, different dimensions: anticipation, reflexivity, inclusion and responsiveness (Stilgoe et al., 2013; Jakobsen et al., 2019). What is more available studies prove that the academic literature considers some of the dimensions as more significant (namely: ethics, social engagement and governance), than the rest (Loureiro, Conceição, 2019).

Nevertheless of this argument, in this study, we use the six key dimensions with the two additional, as the most comprehensive one. The dimensions are described as follows in table 1.

Table 1.
RRI dimensions

Dimension	Type of dimension	Description
Public engagement	Main	Maximising the number of people from the society engaged in the scientific process
Gender equality	Main	Aiming for gender balance and equality in research and innovation
Science education	Main	Focus on the communication of research principles and education equipping with RRI values
Open access (open science)	Main	Free, unrestricted and easy access to research results, data and related literature
Ethics	Main	Developing and implementing ethical standards and good practices in research and innovation
Governance	Main	Active enforcement of RRI values
Sustainability	Additional	Contribution of research and innovation to sustainable development
Social justice/inclusion	Additional	Participation of social groups in benefits arising from research and innovation

Source: Own elaboration based on European Commission (2015) and RRI Tools, https://www.rri-tools.eu/, 2.06.2023.

3. RRI and Research and Innovation Strategies (RIS3)

One of the areas noted by scholars in RRI related literature is the one linking this concept with research and innovation strategies for smart specialisation (RIS3) and regional innovation systems (Fitjar et al., 2019; Thapa et al., 2019; Rehfeld, 2019; Barton et al., 2019).

The literature on the relation of RRI with RIS3 or regional innovation is scarce, almost non-existent. Searches in Web of Science and Scopus resulted in identifying only 4 papers (included in both databases) that linked the concept of RRI with "regional innovation" and only 1 of them addressed RIS3 directly (Fitjar et al., 2019) and 1 addressed regional innovation studies, where some aspects of RIS3 (as innovation policy) were analysed indirectly (Thapa et al., 2019).

In the selected papers, RRI, as already mentioned, is presented as an innovation policy foregrounding the responsibility of researchers and innovators towards society, mostly promoted by Horizon 2020 related calls. Whereas Research and Innovation Strategies for Smart Specialisation (RIS3) were introduced as an innovation development tool at a regional level. The EU programming period 2014–2020 required regions to develop so-called "smart specialisation strategies", in line with RIS3, as a condition for accessing to European Structural and Investment Funds, making RIS3 an essential part of EU's cohesion policy.

RRI and RIS3, both being innovation policies, have common elements, such as: focus on broad stakeholder involvement in the development of innovation policy and implementation of innovation processes, as well as emphasise the need for research and innovation to solve societal challenges.

Fitjar et al. (2019) argue that “despite the apparent similarities between RRI and RIS3, there are substantive differences in their design and implementation, notably in the theories on which they build, and the networks, norms, and practices with which they have become associated”. The two differences noted by Fitjar et al. (2019) include: lack of regional (geographical) focus and ambiguous definition of the society/societal actors (stakeholders) in RRI. Further, the authors propose to include Stilgoe et al.’s (2013) RRI framework to RIS3 and include the following dimensions: anticipation, reflexivity, inclusion and responsiveness in research and innovation strategies to incorporate a responsible approach to smart specialisation. This paper doesn’t, however, take into account the six key dimensions of RRI recommended by the Rome Declaration (2014): public engagement, gender equality, science education, open access (open science), ethics and governance. The authors of the discussed paper didn’t also attempt to empirically verify whether any aspects of the RRI concept are included and used in RIS3.

Lack of sufficient focus on the influence of RRI and regional innovation is supported by Thapa et al. (2019), who view this relation in the light of regional development. Authors of the paper note that “RRI debate is highly compatible with regional innovation studies” by providing governance dimension and guidance on drivers and tools for more responsible regional innovation policies. They also further provide examples on how RRI concept can support regional innovation policies, however, the cases remain general without addressing the specific actions taken on the regional level as a part of the innovation systems and ignore RIS3 as EU’s regional innovation policy.

Despite the small number of papers linking RRI with RIS3 and regional innovation systems, the relation seems to be important, as both concepts are part of EU innovation policy. Although they address different levels (general vs. regional) there is a need to align these two concepts to reinforce EU’s innovation policies towards a more sound approach and as a result, provide a harmonised effect on responsible and sustainable outcomes of innovation activities for regional development.

This study is an attempt to bridge the identified literature and research gaps and to investigate to what extent are the RRI principles empirically are present in RIS3-based regional innovation system. Furthermore, we discuss how the regional innovation strategies can be reinforced with RRI principles. For this reason, we analysed 16 regional innovation strategies, that create framework for regional public support for innovation ecosystem in Poland.

4. RIS3/Regional innovation strategies in Poland

Poland has been a member the European Union since 2004. As member state Poland and Polish regions have their share in EU policies. Polish economy, after systemic transition in 1989 can be seen as European growth champion. It has more than doubled its gross domestic product

(GDP) per capita in last 20 years, coming in ahead of all European peers. It was the only EU economy to avoid the 2008-2009 global financial crisis. However with only two-thirds of the level of income of the euro zone, Poland is still far from full convergence with the West. Although midterm growth prospects are positive, Poland's longer-term growth prospects will depend on its ability to further reform higher education, stem demographic decline, and—above all—enhance innovation (World Bank Group, 2016). Unfortunately Poland is a regional laggard in terms of innovation outputs, e.g. the levels of total and private R&D spending are below the European average and regional peers (Regional Innovation Scoreboard, 2019). The innovation outputs are also underperforming. The economy's exports are mostly based on low-tech rather than high-tech industries. Poland continues to compete largely on price rather than on the quality of its products and services (World Bank Group, 2016).

RIS3 is one of tools which aims to strength innovation focus in policy and economy. Poland has developed separate RIS3s at the national and regional levels, so all of 16 of Polish regional governments had developed their own RIS3s. Some of them were voluntarily submitted for the review of the European Commission as a part of a mandatory package related to the ROPs (World Bank Group, 2016). The European Commission accepted all regional and national operational programs in February 2015.

At the country level, there remains fragmentation in the RIS system and there is no clear leadership of the RIS3 process in Poland. Governance is divided between MRiT (Ministry of Economic Development and Technology) and MEiN (Ministry of Education and Science). The regional dimension of RIS3 implementation in Poland is the responsibility of the Marshal's Office within each region (marshals are the regional heads of government) and is coordinated by the Ministry of Infrastructure and Development. The present approach highlights each region as a separate entity and does not promote a strong linkage with national priority setting (Miler et al., 2014). Regions differ significantly with respect to the organisational structures used to implement and monitor RSI3 (Sołtysiak, Wyrwa, 2017).

As research by World Bank Group (2016) indicates there are differences in the quality of RIS3 at the regional level. The process of RIS3 preparation began in some regions on the basis of an old style top-down process, with little involvement from other stakeholders, especially from SMEs. In a number of cases, the evidence supporting the choice of regional smart specializations left scope for improvement. In general, there are important regional differences between RIS3 development procedures.

5. Research methodology and results

In order to analyse whether the RRI principles are present in RIS3-based regional innovation system, we analysed 16 regional innovation strategies (RIS), that underpin the innovation ecosystem in Poland. To evaluate the RRI presence we used the six key dimensions of RRI: public engagement, gender equality, science education, open access (open science), ethics and governance supported by the two additional ones: sustainability and social justice/inclusion. The dimensions were considered as keywords that were further expanded into sets of keywords for each dimension.

Table 2.
Main and additional keywords used in research

Main keyword	Additional keywords included in the analysis
Public engagement	Participation Social Society
Gender equality	Man Woman Men Woman
Science education	Promotion (of science) Dissemination Communication
Open access (open science)	Free
Ethics	Ethical
Governance	Management Implementation (of RRI principles) Promotion (of RRI principles) Information (about RRI principles)
Sustainability	Sustainable development CSR – corporate social responsibility Environmental Eco-innovation Ecology
Social justice/inclusion	-

Source: Own research.

As the documents analysed in our research were in Polish, we had to consider all grammatical forms of the given keywords, which in the Polish language included declension and what was not possible to present in table 2. Furthermore, we found some of the keywords overlapping (as in the case of “promotion” that was included both in the “Science education” and “Governance” dimensions), however, we decided to include it in both dimensions in order to analyse a high number of synonyms associated with the main keywords and different RRI dimensions. Finally, we found this overlap to be both direct and indirect. While looking for connections of RIS3 documents with RRI principles in one dimension, we focused on identifying connections with other dimensions as well. This was the case of the keyword “engagement” form the “Public engagement” dimension, that allowed us to find also connections with the “Social justice / social inclusion” dimension, although we did not consider the keyword “engagement” as connected with this second dimension.

The bodies responsible for the development and implementation of the Regional Innovation Strategies in Poland were the Marshall Offices of each of the 16 Polish regions. The full texts of the documents for the analysis were available in open access and were retrieved either from the Marshall Office’s webpage or its public information bulletin (being part of it).

The RIS3 documents we analysed were not developed according to one standard. This meant that the documents were different in structure, sometimes covering both the "diagnostic part" which led to its development (including, e.g. SWOT analysis of the region) and "strategic part", including recommendations for the regional innovation strategies and smart specialisation selection and sometimes covering only the main, strategic part. Additionally, the lack of standardisation influenced the volume of the analysed documents. We found some of them to be extensive and detailed 200+ pages documents, whereas almost half of them (7/16) was less extensive and more general, counting from 60 to 90 pages. The total volume of the RIS3 documents counted to almost 2100 pages. Each author reviewed the full text of 8 Regional Innovation Strategies, being equivalent of half the total number of the pages. Additionally, the two sub-samples were divided to include both longer and shorter documents so that every author could review different types of texts.

As the main part of our study, we analysed the documents and counted the occurrences of the main and additional keywords. We identified two types of occurrences: (1) "occurrence in RRI meaning" and (2) "occurrence in RRI-related meaning". We considered the first case as descriptions that would directly refer to the definition or principles of RRI or the description of the analysed dimensions. We considered the second case as descriptions that would refer to RRI dimensions but were used in the RIS3 documents in other meanings.

Furthermore, we divided the identified occurrences into two additional groups: (1) "occurrences in the diagnostic part", referring to the "diagnostic part" of the RIS3 documents (if such was included) and (2) "occurrences in the strategic part", referring to the "strategic part" of the RIS3 documents (present in all of them).

As a result of the conducted study, we were able to identify the occurrences of the keywords by the analysed regions (Table 3) and by RRI dimensions (Table 4). Additionally, the detailed results presented both by regions and by RRI dimensions are presented in Appendix 1.

In case of the analysis by regions we were able to identify a total number of 6431 occurrences of the analysed keywords, however only in 375 cases, they were used in RRI meaning (58 in the "diagnostic part" and 317 in the "strategic part"). Additionally, we found 155 occurrences in RRI-related meaning (37 in the "diagnostic part" and 118 in the "strategic part").

The regions with the highest number of occurrences of the keywords in RRI meaning were: Malopolskie (Lesser Poland) – 96; Podkarapckie (Subcarpathia) – 65 (both in the "diagnostic part" and "strategic part") and Zachodniopomorskie (West Pomeranian) – 57. In the same time in RIS3 documents of 6 out of 16 regions we were unable to find any occurrence of the keywords in RRI meaning: Dolnoslaskie (Lower Silesian); Lubelskie (Lublin Province); Lubuskie (Lubusz); Slaskie (Silesia); Swietokrzyskie (Holy Cross Province); Warminsko-mazurskie (Warmia-Masurian). Table 3 provides a complete summary of the results obtained.

Table 3.
Research results – occurrences of keywords by regions – RIS strategies for 2011-2020

Region in Polish	Region in English	Number of keywords occurrences	Total occurrences in the diagnostic part		Total occurrences in the strategic part	
			Total occurrences in RRI meaning	Total occurrences in RRI-related meaning	Total occurrences in RRI meaning	Total occurrences in RRI-related meaning
Dolnoslaskie	Lower Silesian	500	6	8	0	4
Kujawsko-pomorskie	Kuyavia-Pomeranian	524	0	0	38	10
Lodzkie	Lodz Province	937	6	6	27	9
Lubelskie	Lublin Province	233	0	1	0	4
Lubuskie	Lubusz	292	6	3	0	2
Malopolskie	Lesser Poland	798	0	0	96	4
Mazowieckie	Masovian	638	2	6	1	21
Opolskie	Opole Province	272	0	0	38	21
Podkarapckie	Subcarpathia	252	35	4	30	4
Podlaskie	Podlasie Province	57	3	0	2	1
Pomorskie	Pomerania	235	0	0	25	17
Slaskie	Silesia	240	0	0	0	6
Swietokrzyskie	Holy Cross Province	155	0	0	0	4
Warminsko-mazurskie	Warmia-Masurian	273	0	1	0	0
Wielkopolskie	Greater Poland	374	0	2	3	4
Zachodniopomorskie	West Pomeranian	651	0	6	57	7
TOTAL		6431	58	37	317	118

Source: Own research.

The second part of our analysis focused on the identification of occurrences of the analysed keywords by RRI dimensions. The dimensions with the highest number of occurrences of the Keywords in RRI meaning was “Sustainability”, which with the total number of occurrences of 962, it appeared in RRI meaning in 264 cases. As for the rest of the dimensions, their presence was significantly less visible. The second two dimensions with the highest number of occurrences of the related keywords were “Social justice / social inclusion” – 50 and “Public engagement” – 40.

In case of 3 dimensions we were not able to find any occurrence of the analysed keywords in RRI meaning, namely: “Gender equality”; “Open access/open science” and “Ethics”. Please consult Table 4. for the rest of the results.

Table 4.
Research results – occurrences of keywords by RRI dimensions – RIS strategies for 2011-2020

RRI Dimension	Number of keywords occurrences	Total occurrences in the diagnostic part		Total occurrences in the strategic part	
		Total occurrences in RRI meaning	Total occurrences in RRI-related meaning	Total occurrences in RRI meaning	Total occurrences in RRI-related meaning
Public engagement	1760	2	6	38	13
Gender equality	30	0	1	0	0
Science education	1002	1	1	17	45
Open access (open science)	224	0	7	0	10
Ethics	4	0	3	0	0
Governance	2250	0	2	3	33
Sustainability	962	40	16	224	17
Social justice/inclusion	199	15	1	35	0
Public engagement	6431	58	37	317	118
TOTAL:	1760	2	6	38	13

Source: Own research.

We analyse number of regional innovation strategies with occurrence of the analysed keywords. The dimension with the highest number of regions with keywords occurrence in RRI meaning was "Sustainability", with total number of 10 regions. This keyword occurred in every strategy which mentioned keywords in RRI meaning. Two of keywords occurred in four regional strategies – they were "Public engagement" and "Social justice/social inclusion". "Science education" appeared in two regions and "Governance" in only one region.

Table 5.
Research results – no of regions with occurrence of keywords in the analysed dimensions – RIS strategies for 2011-2020

RRI Dimension	Total occurrences in the diagnostic part		Total occurrences in the strategic part	
	Total occurrences in RRI meaning	Total occurrences in RRI-related meaning	Total occurrences in RRI meaning	Total occurrences in RRI-related meaning
Public engagement	1	4	4	5
Gender equality	0	1	0	0
Science education	1	1	2	7
Open access (open science)	0	2	0	5
Ethics	0	1	0	0
Governance	0	1	1	7
Sustainability	5	6	10	7
Social justice/inclusion	3	1	4	0
Public engagement	1	4	4	5
TOTAL:	0	1	0	0

Source: Own research.

The keyword „sustainability" has the highest frequency of occurrence. It occurs 224 times in 10 out of 16 strategies. It is used in regional innovation strategies in the four ways:

- As „sustainable development" used mainly in general meaning or in meaning focused on energy saving initiatives. In region of Subcarpatia "sustainable development" is a key priority for RIS as "Smart, sustainable and inclusive development".
- As environmental friendly technologies in the general meaning. It is used mainly for general feature of broad range of technologies in the area of food, health and energy.
- As ecoinnovations. This term which term is heavily used in strategy documents for Subcarpatia and Lodzkie. Both regions indicated it as one of strategy activities. Region of Greater Poland focuses on ecoinnovative means of transport as its' smart specialisation.
- As promotion of corporate social responsibility – in only one region.

Keyword "public engagement" is used in the strategies mainly in the context of public (various actors) involvement in innovation processes. None of the analysed strategies does not refer to public engagement in R&D activities.

Keyword "Social justice/social inclusion" is used in a context of social inclusion. The process of smart specialization selection should support social inclusion or - in other document - regional innovation strategy is seen as tool for increase of social inclusion level. Social inclusion can be achieved thorough support for economy characterised by high level of employment, and by economic, social and territorial coherence.

Keyword "Science education" occurs mainly in the context of promotion. Special attention is payed to various actions aimed at promotion of science with special respect to young adults. Planned actions include organising of centres for dissemination of science and technical achievements and science festivals. One of actions assume also science promotion via creation and dissemination of specialized sources of information.

Keyword „governance" occurs in one regional strategy (Lesser Poland) in the meaning of promotion. The keyword occurs in relation to promotion of environmental principles in the field of sustainable development.

6. Conclusions

The content analysis of the regional innovation strategies of the regions of Poland, which was carried out, points to a number of important conclusions. The key one is the very limited presence of the RRI concept in Polish RIS. In strategic documents relating to the sphere of innovation. Almost all RRI concepts appear incidentally and some are absent altogether.

To some extent, the exception is the concept of "Sustainability". It is present in 10 documents out of a total of 16. It also occurs extremely frequently, as many as 224 times. This represents 70.6% of the total number of occurrences of all RRI-related concepts analyzed, and it also means that the occurrences of "Sustainability" concepts are twice as numerous as the total occurrences of the other concepts. Such a high result, when juxtaposed with the less numerous statistics related to the other concepts, indicates a significant unevenness in their use in RIS documents in Poland.

On the other hand, there are concepts that almost do not exist in the surveyed documents in the RRI sense. "Gender equality" occurred 30 times, but in the RRI-like sense it occurred only once, and that in the analytical part. Thus, it appears that this part of RRI policies does not appear in strategic thinking about innovation at the regional level. Concepts related to the "Ethics" dimension occurred only four times - in one RIS document and only in the analytical part.

In light of the analysis results obtained, it can be concluded that the level of consideration of RRI concepts in regional strategic documents in Poland is deeply unsatisfactory. Therefore, it can be pointed out that there is a need to strengthen awareness of this area of issues for modern innovation activities, including those relating to scientific, implementation and strictly business activities.

In the context of the analysis of the texts, there are important methodological conclusions. Its implementation involved overcoming a number of challenges. The first of these was to conduct an appropriate semantic selection of the identified words formulated in Polish. Although more than 6,400 occurrences of the search terms were identified, only 435 were identified as occurring in a meaning that coincided with the RRI and in the strategy document. This represents less than 7% of the total. This indicates the huge discrepancies in meaning, and the necessity of including them in the analysis. At the same time, it justifies the methodology used to analyze each case separately. Based, only on the statistics of occurrences of the words in question, the results of the analysis would be drastically (about 14 times) overestimated.

Another solution used was to analyze statistics taking into account the structure of strategic documents. This is because the authors assumed that for the purpose of the article, the content in the strategic part of the analyzed documents is of key importance. While the content in the analytical part, related to the evaluation and analysis of the existing state, is of supporting importance. Their appearance in this part may indicate awareness of the importance of the factors in question, but does not involve the intention to implement/support them in the future.

The realized study has limitations related to the focus on one type of strategic documents occurring at the regional level. In further steps, it would be recommended to expand the analysis to include, among others, documents relating to the strategy of provincial development, or also documents relating to regional operational programs, individual provinces. An important methodological contribution of this article to further work on the topic would be to take into account the conclusions relating to the need to conduct a detailed meaning analysis and to take into account the complex structure of the documents, and thus to concentrate work on the parts of key strategic importance.

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Appendix 1.

Research results – occurrences of keywords by regions and RRI dimensions (in detail) – RIS strategies for 2011-2020

Region in Polish	**Region in English**	**RRI dimension**	**Number of keywords occu-rrences**	**Occurrences in the diagnostic part**		**Occurrences in the strategic part**	
				Occu-rrences in RRI meaning	**Occu-rrences in RRI-related meaning**	**Occu-rrences in RRI meaning**	**Occu-rrences in RRI-related meaning**
Dolnoslaskie	Lower Silesian	Public engagement	126				
		Gender equality	0				
		Science education	68	1			2
		Open access/open science	40				
		Ethics	3		3		
		Governance	160		2		
		Sustainability	87	4	3		2
		Social justice/social inclusion	16	1			
Kujawsko-pomorskie	Kuyavia-Pomeranian	Public engagement	153			13	7
		Gender equality	0				
		Science education	124				
		Open access/open science	15				2
		Ethics	0				
		Governance	151				1
		Sustainability	74			18	
		Social justice/social inclusion	7			7	
Lodzkie	Lodz Province	Public engagement	164		2	8	
		Gender equality	1		1		
		Science education	190				
		Open access/open science	20				
		Ethics	1				
		Governance	408				7
		Sustainability	141	6	3	19	2
		Social justice/social inclusion	12				
Lubelskie	Lublin Province	Public engagement	58				1
		Gender equality	0				
		Science education	19				
		Open access/open science	21				1
		Ethics	0				
		Governance	77				1
		Sustainability	39		1		1
		Social justice/social inclusion	19				
Lubuskie	Lubusz	Public engagement	42		1		
		Gender equality	4				
		Science education	76				
		Open access/open science	6		1		
		Ethics	0				
		Governance	100				2
		Sustainability	37				
		Social justice/social inclusion	27	6	1		
Malopolskie	Lesser Poland	Public engagement	275			5	
		Gender equality	2				
		Science education	68				
		Open access/open science	72				
		Ethics	0				
		Governance	213			3	
		Sustainability	138			70	4
		Social justice/social inclusion	30			18	
Mazowieckie	Masovian	Public engagement	279		1		
		Gender equality	5				
		Science education	87		1		
		Open access/open science	14				1
		Ethics	0				
		Governance	163				17
		Sustainability	74	2	4	1	3
		Social justice/social inclusion	16				

Opolskie	Opole Province	Public engagement	101			12	2
		Gender equality	0				
		Science education	56				16
		Open access/open science	4				
		Ethics	0				
		Governance	76				3
		Sustainability	30			26	
		Social justice/social inclusion	5				
Podkarapckie	Subcarpathia	Public engagement	15	2			
		Gender equality	1				
		Science education	31			2	2
		Open access/open science	0				
		Ethics	0				
		Governance	1				
		Sustainability	173	25	4	22	2
		Social justice/social inclusion	31	8		6	
Podlaksie	Podlasie Province	Public engagement	8				
		Gender equality	0				
		Science education	14				1
		Open access/open science	0				
		Ethics	0				
		Governance	23				
		Sustainability	12	3		2	
		Social justice/social inclusion	0				
Pomorskie	Pomerania	Public engagement	51				
		Gender equality	0				
		Science education	64			15	17
		Open access/open science	0				
		Ethics	0				
		Governance	110				
		Sustainability	10			10	
		Social justice/social inclusion	0				
Slaskie	Silesia	Public engagement	59				2
		Gender equality	0				
		Science education	49				3
		Open access/open science	7				1
		Ethics	0				
		Governance	112				
		Sustainability	12				
		Social justice/social inclusion	1				
Swietokrzyskie	Holy Cross Province	Public engagement	70				1
		Gender equality	1				
		Science education	2				
		Open access/open science	1				
		Ethics	0				
		Governance	66				
		Sustainability	15				3
		Social justice/social inclusion	0				
Warminsko-mazurskie	Warmia-Masurian	Public engagement	39				
		Gender equality	0				
		Science education	13				
		Open access/open science	6				
		Ethics	0				
		Governance	175				
		Sustainability	22		1		
		Social justice/social inclusion	18				
Wielkopolskie	Greater Poland	Public engagement	55		2		
		Gender equality	0				
		Science education	78				4
		Open access/open science	7				
		Ethics	0				
		Governance	183				
		Sustainability	38			3	
		Social justice/social inclusion	13				
Zachodnio-pomorskie	West Pomeranian	Public engagement	265				
		Gender equality	16				
		Science education	63				
		Open access/open science	11		6		5
		Ethics	0				
		Governance	232				2
		Sustainability	60			53	
		Social justice/social inclusion	4			4	
		TOTAL	6431	58	37	317	118

SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

PRO-ENVIRONMENTAL CONSUMER ENGAGEMENT – BEHAVIORAL CHANGES IN THE CONTEXT OF THE COVID-19 PANDEMIC

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Purpose: The aim of the article was to provide an overview of the phenomenon of the ecologization of consumption in the context of post-pandemic changes in consumer behaviors and attitudes.
Design/methodology/approach: The critical analysis method used in literary research with the use of secondary sources was employed in the study.
Findings: Contemporary consumption is inseparably linked to environmental concern, manifesting in the phenomenon of green consumerism. The trend of ecologizing consumption, stemming from the growing ecological awareness in society, was intensified in the aftermath of the COVID-19 pandemic. Despite the increasing popularity of green consumerism, the challenge lies in the "green gap" – the disparity between declared pro-environmental attitudes and the actual behaviors of consumers.
Research limitations/implications: The paper is descriptive in nature. Further research should focus on developing a tool for measuring changes in consumer attitudes and behaviors following the COVID-19 pandemic.
Social implications: The study identified significant aspects related to... Increasing the level of ecological awareness and shaping attitudes are only possible through public discourse and extensive information on the state and needs of the environment, as well as necessary pro-environmental actions. The social responsibility of consumers and the level of pro-environmental activities, as an expression of this responsibility, directly determine the quality of life for future generations.
Originality/value: The novelty of the article lies in outlining the possibilities for the development of the concept of sustainable development in the context of the changes that the COVID-19 pandemic induced in the ecological awareness of many consumers.
Keywords: sustainable consumer behavior, green consumerism, ecological awareness, COVID-19.
Category of the paper: General review.

1. Introduction

Over the past few decades, the focus has shifted towards the protection of the planet, personal health, and animal life. Against this backdrop, the concept of sustainable consumption has developed, understood as a process of exchange between humans and the environment, considering economic, ecological, social, psychological, demographic, spatial, and intertemporal aspects. Interest in these aspects is constantly growing and has a significant impact on consumer purchasing behaviors (Roper Organisation, 1990). Green consumerism signifies a concern for environmental protection and a non-invasive lifestyle. Actions that cause minimal harm to the natural environment are preferred, prompting the urgent need for intervention in the post-modern lifestyle and consumer behavior patterns in contemporary society. Environmental organizations advocate for a co-responsible, sustainable, and wise lifestyle. In this context, the consumer plays a primary role, relatively autonomous in their own decisions and market choices (McMeeking, Southerton, 2012).

The outbreak of the COVID-19 pandemic immediately changed our world, which was previously considered safe and predictable. Sustainable development across all layers of human society faced unprecedented challenges. This influenced a transformation in consumer attitudes. Consumer ecological awareness, characteristics, and purchasing choices are changing. Consumer purchasing decisions increasingly focus on environmental concerns. Consumers can play a crucial role by adopting such a lifestyle, where the pursuit of adequacy, voluntary simplicity, sustainable consumption, can become part of a new economy. In a society increasingly aware of the impact of its actions on the planet, green consumerism becomes not only a lifestyle but also a significant tool contributing to global environmental protection.

Numerous works on the pro-ecological behavior of the modern consumer have been published in both scientific journals and popular press. However, there is a lack of works that would show how the greening consumption trend, resulting from the growing ecological awareness of society, has been strengthened as a result of the COVID-19 pandemic. Against this background, a research gap was identified and the aim of the article was to present the phenomenon of greening consumption in the perspective of post-pandemic changes that have occurred in consumer behavior and attitudes.

The paper is organized as follows. The literature review presented in Section 2 examines green consumerism as a phenomenon reflecting buyers' attitudes toward the environment. In this section the essence of the concept and the most important aspects of greening consumption were explained. Green consumers were characterized and the benefits and barriers of eco-consumption were indicated. Finally the phenomenon of the green gap that accompanies contemporary pro-ecological consumption was presented. In Section 3, in pursuit of the assumed aim of the article, the focus was on specific consequences of the COVID-19 pandemic that may be observed in terms of the consumers’ ecological awareness and changes in their behavior. Finally, the Summary section clearly highlights the lessons learned during the pandemic in terms of shifting consumer awareness towards a more sustainable point of view and a responsible approach to environmental issues.

2. Green Consumerism and Buyers' Attitudes Toward the Environment

2.1. The Phenomenon of Ecologization of Consumption

Ecological consumer behaviors are a form of pro-environmental behavior, defined as a form of consumption causing minimal harm, or even benefiting, the natural environment (Steg, Vlek, 2009). Ecologization of consumption is understood through an interest in natural products and a certain respect for the natural environment (Rogala, 2015). This involves using goods and services that satisfy basic human needs while minimizing the consumption of natural resources. In a broader context, we can speak of sustainable consumption, a form of exchange where something is taken from the environment, and something must be given back, following the principle of conservation of matter. The consumption process cannot rely solely on the consumption of resources to satisfy needs; it must be a certain exchange between humans and the environment (Jedlińska, 2009). In this way, buyers, basing their choices on moral beliefs, become socially responsible.

According to Tarapata (2015), sustainable consumption is often manifested in frugal use of consumer goods, limiting the consumption of goods generating hazardous post-consumption waste, consuming ecological goods (i.e., not supplemented with imitations such as artificial protein, leather, or wood imitation), and consuming goods that do not come from inhumane animal farming or slave labor. Sustainable consumption is characterized by traits such as durability, balance, and maintenance. It is a process of using goods and services where meeting needs improves the quality of life in two dimensions. Firstly, achieving goals involves reducing the consumption of natural resources while ceasing the use of toxic substances. Secondly, satisfying the needs of current generations does not become an obstacle for future generations (Janoś-Kresło, 2006).

Kiełczewski (2008) points out the following aspects of sustainable consumption:

- Economic aspect: a fixed proportion exists between current and future consumption that does not contribute to economic imbalance.
- Ecological aspect: the utility of consumption is maximized while maintaining the quality of natural resources, meaning consumption of goods least burdensome to the environment.
- Social aspect: consumption is relatively evenly distributed, accessible to all people regardless of time and place, regarding socially desirable goods.

- Psychological aspect: the consumption process contributes to an increase in the quality of life, achieving an optimal balance between material consumption and satisfying non-material needs.
- Demographic aspect: demographic conditions do not create a barrier to consumption growth.
- Spatial aspect: ways of satisfying needs do not violate spatial order.
- Intertemporal aspect: these assumptions are achievable over an unlimited time perspective.

Green consumerism refers to a state in which consumers demand products and services that have undergone environmentally safe production processes or processes in which the planet's resources are protected and recycled. In other words, green consumerism relates to the production, promotion, and use of goods and services based on their environmental benefits. In this context, green consumerism creates a balance between consumer behavior and organizational profit goals, as it largely relies on sustainable and environmentally friendly consumer behaviors. Modern consumers are increasingly interested in the conditions under which products are manufactured, significantly influencing the market. Consumers are becoming more aware of the consequences of their purchases and dietary choices, leading to qualitative and quantitative changes in consumed products (Rogala, 2015).

2.2. Characteristics of Green Consumers and Benefits and Barriers of Eco-Consumption

The foundation of green consumerism lies in social and cultural factors; however, it's essential to note that economic and marketing factors also influence pro-environmental consumer behavior. Economic factors, such as income, often form the basis for consumption decisions along with price. Marketing factors, especially promotion and its tools, similarly influence consumer behavior by drawing attention to specific products, informing about the benefits of their purchase, and identifying environmentally friendly products of a company (Mańkowska-Wróbel, 2014). The demand for "green" products among societies is influenced by the level of ecological awareness, income level, knowledge, and applied marketing actions. Increased consumer demands, lifestyle changes, competitive business actions, and environmental pollution ultimately shape the market for eco-friendly products.

In the literature, various proposals characterize consumers in the market for organic products. Environmentally active consumers are described as individuals recognizing the need for change and adjusting their purchasing, consumption, and disposal behaviors. They are often well-educated, more affluent, and more politically and socially active. For these individuals, ecological awareness is not a periodic action but a way of life. They are also willing to pay more for environmentally friendly products (Roper Organization, 1990). Education can be a determinant of pro-environmental consumer behaviors since individuals with higher education tend to exhibit the highest levels of ecological awareness (Kiełczewski, 2008).

Budget also plays a fundamental role in consumer behavior. Individuals with low incomes may focus on meeting basic needs without analyzing the product's quality or considering its ecological and social consequences (Kiełczewski, 2008).

For green consumers, the state of their health and the planet is equally important and clearly reflected in their behavior. They are not only active consumers of environmentally friendly products but also have a significant influence on other buyers. Eco-consumers prioritize ecological and natural food without artificial ingredients, physical activity, and eco-friendly recreation (Astakhova et al., 2020). They often act as bio-activists, driven by health and environmental motivations. The "bio" prefix is an additional value for them, an advantage of eco-products, representing their competitive value and guarantee of quality (Cichocka, Grabiński, 2009).

It is important to note that sustainable consumption is not necessarily tied to belonging to a specific social group but rather to exhibiting health-conscious eating habits (Rogala, 2015). Green consumers are characterized by motives guiding their choices and purchases. They are sensible consumers who buy goods based on reliable knowledge and information (Klimczyk-Bryk, 2000). Concerned about their own health or the health of their families, green consumers limit purchases of new goods, intentionally opting for used products. These buyers often boycott mass production, natural fur, or cosmetics tested on animals. These actions lead to changes in dietary habits and the abandonment of goods that involve animal suffering (Kiełczewski, 2015). These actions belong to two forms of so-called ethical consumption. The first is positive buying, involving purchases from trusted sellers guided by long-term societal and environmental well-being. The second is moral boycott, involving abstaining from buying products from companies acting unethically (Zalejski, 2012).

Environmentally active customers, as mentioned, are interested in improving their own health and that of their families. Therefore, they often purchase natural and organic products that enhance health and physical fitness, ranging from food to personal hygiene products. When buying food products, these customers trust information from friends or the media. They also frequently purchase dietary supplements, engage in regular physical activity, and consume functional food, offering health benefits beyond their nutritional value. In addition to nutrient-rich products like fruits and vegetables, this category also includes food enriched with vitamins, minerals, probiotics, and fiber (Choi, Feinberg, 2021). Eco-consumers' pro-environmental purchases go beyond healthy food. Solar panels, interior furnishings made from eco-friendly materials, ecotourism, and integrative medicine, which combines conventional and traditional medicine in a personalized treatment model, are gaining significant interest (Mróz, Sadowska, 2015). By purchasing energy-efficient devices or products with a long life cycle, green consumers support pro-environmental attitudes and contribute to positive social change (Witek, 2014), reaping numerous benefits simultaneously.

The most important and significant benefit of eco-consumption is the improvement of consumers' health. Consuming organic products, which are healthier due to the absence of artificial fertilizers, antibiotics, hormones, or pesticides in their cultivation and production, contributes to public health improvement, leading to an extended average lifespan (Lin, Lin, 2015).

Undoubtedly, an advantage of eco-consumption is the increased awareness of consumers regarding critical environmental and social issues. Depletion of green areas and the impact of pollution on the natural environment can have irreversible consequences in the near future. Excessive deforestation, overfishing, air pollution, fires, genetically modified food, and many other threats significantly affect the environment and the life of contemporary humans (Zalejski, 2012). Therefore, a change in thinking about environmental protection and awareness of the danger of environmental degradation is crucial. By using eco-friendly products, segregating waste, buying local and organic food, eco-consumers make a real contribution to environmental protection by reducing the carbon footprint of transportation and limiting the use of pesticides and artificial fertilizers (Zulfiqar, 2015).

The third benefit is cost savings, thanks to the use of renewable energy sources (e.g., solar panels) and reusable products. Utilizing products and solutions based on solar energy, rather than electricity, is one of the primary ways to prevent environmental destruction. Initially, some of these products may seem more expensive than traditional ones, but in the longer term, they enable savings. These products are environmentally friendly and more durable, as they harness natural energy. With the option for multiple uses, eco-friendly products allow consumers to make smaller purchases, help reduce costs, and enjoy savings in terms of time and convenience (Lin, Lin, 2015).

Despite the observed growth in eco-friendly consumption, there are still barriers that consumers identify as reasons for not buying such products. In most cases, these barriers include the lack of eco-friendly products in the stores where they shop and ignorance of stores selling eco-friendly products. Limited consumer income compared to the high prices of eco-friendly products can also be a limitation (Witek, 2011). Moreover, the limited access to information related to sales locations and the availability of organic food can be a barrier as well (Żakowska-Biemans, 2011). Another significant obstacle to purchasing organic products is the difficulty in distinguishing them from other products, which is linked to consumers' low ecological awareness, limited knowledge about organic products, and their labeling. Regarding the consumption of organic food, the most common difficulties are associated with reducing meat consumption, changing daily habits (e.g., forgetting one's shopping bag), and a lack of knowledge about waste segregation or where to dispose of electronic waste (Green Generation, 2020).

2.3. Green Gap and Determinants of Pro-Environmental Consumption

Over the last few decades, the increase in wealth and the development of the middle class have resulted in an increased interest in the quality of life (Senik, 2014). High level of economic prosperity and material abundance have led people to adopt a more philosophical and conscious approach to life (Mostafa, 2013). According to research, these consumers differ from traditionalists in values such as authenticity, harmony with the environment, social awareness and ecological and human well-being (Ray, Anderson, 2000; Choi, Feinberg, 2021). These values, perceived as an important new trend in the society life (Veenhoven, 2010), fit into the idea of green consumption, which translates into specific market decisions but also changes in consumer attitudes (Zaremba-Warnke, 2009):

- Limiting the constant growth of acquiring goods, taking into account environmental needs.
- Reducing the purchase of non-eco-friendly products.
- Efficient and economical behaviors in households.
- Social participation - creating ecological awareness, changing value systems, and transforming sales processes to meet needs.

However, it should be noted that some consumers, although expressing eco-friendly attitudes, do not act consistently with them. For example, despite the increase in the cultivation of organic food and numerous studies examining factors influencing the intentions of buying organic food, the share of organic food and beverages in the consumer goods market remains relatively low in many countries (Belz, Ken, 2009). In this context, the term "green gap" is used due to the disparity between consumers' statements or expressions and their actual behavior (Hansmann et al., 2020; Chekima, 2018). This means that, in reality, the number of customers who identify themselves as environmentally friendly may be much higher than the number of actual eco-consumers. This could result from the widespread use of a consumer's attitude toward the environment in the context of projecting their overall ecological behavior.

According to Vermeir & Verbeke (2008), a favorable attitude toward sustainable products is an excellent starting point for implementing sustainable consumption. It was established that the closer the attitude toward a specific product, which fits, reflects, or corresponds to behavior, the more predictive the attitude becomes. Interpreting the relationships between pro-environmental attitudes and consumer behaviors, some researchers emphasize the occurrence of a pro-environmental attitude in an individual as a necessary condition for pro-environmental behaviors to occur (Zrałek, 2018). However, other studies have shown that a general attitude toward the environment does not necessarily translate into other environmentally friendly contexts (Oreg, Katz-Gerro, 2006). According to Rodríguez-Barreiro et al. (2013), the impact of attitude on the intention to purchase organic food is ambiguous, as some results showed a modest connection while others detected a non-significant relationship (Gupta, Ogden, 2009; Moser, 2015).

According to Marchand & Walker (2008), people desire a more environmentally friendly lifestyle not only because they care about the environment and understand their role in the ecosystem but also because they anticipate personal benefits. Personal benefits are associated with the product and can only be obtained through consumption or use, resulting in a favorable attitude toward the product. Therefore, the more positive the attitude toward a particular product, which fits, reflects, or corresponds to the attitude toward action, the more predictive that attitude will be.

Milfont (2012) expresses environmental attitudes as positive or unfavorable psychological orientations toward the environment. In light of available research results, pro-environmental attitudes manifest in individuals who openly advocate for environmental protection. On the other hand, environmental indifference may be exhibited by individuals uninterested in the topic, not demonstrating pro-environmental attitudes, considering it's not yet time to address environmental issues or consciously ignoring the protection of the natural environment (Kłos, 2015). Meanwhile, the greening of consumption may result from consumer fatigue with an excess of goods and services, growing environmental awareness, social activism, or negative experiences (Kiełczewski, 2015). In the case of increased water fees or waste disposal, part of society will undoubtedly slow down its spending and start meticulously segregating waste. Purchasing behaviors are also influenced by the development of the green product market, the level of customer wealth, or the state's environmental policy (Łuczka-Bakuła, 2011).

Declared attitudes somewhat differ from actual consumer behaviors and are influenced by views, values, and beliefs about the natural environment. Revealing true consumer preferences can determine decision-making (Janoś-Kresło, 2006). On the other hand, the state of environmental awareness, especially awareness of environmental degradation threats, influences consumers' motivation systems, becoming a causal factor in pro-environmental actions.

It is also worth considering whether market behaviors are limited only to the purchase of eco-friendly products or whether they also involve a series of actions taken for the sake of the environment. The results of available studies demonstrate that the motivation for buying organic food may be concern for one's health and family, a preference for a healthy lifestyle, an increase in health risks, or health problems, and to a lesser extent, concern for the natural environment (Łuczka-Bakuła, 2011). Therefore, it is advisable to consider that some consumers are individuals who are more guided by selfish motives than altruistic ones. Their motivations will be more dominated by individual good than the common good, which is the natural environment. It would be worthwhile to delve into the issue of individual environmental awareness.

Ecological awareness can also be defined as reflection on the relationships between humans and the natural environment (Biela, 1993). According to Hartmann and Ibanez (2006), "environmental awareness" refers to the cognitive dimension of ecological attitudes, i.e. ecological behavior. Ideal ecological awareness can be perceived in a holistic dimension (as the perception of the world as a whole, exhibiting characteristics typical of living organisms), referential (expressing respect for everything that exists), and as participatory awareness (accepting the assumption that people are participants in the world, not just observers). Achieving these dimensions of ecological awareness can be considered equivalent to a return to the original symbiosis between humans and nature and the realization of a socio-biosphere partnership, resulting in an elevation to a higher level of evolutionary development (Gawor, 2012).

One of the stages of ecological awareness development is ideological awareness. It is primarily built on pre-existing assumptions and is often characterized by representatives of environmental movements. Another type of ecological awareness is a common, scientific awareness, which has its foundations in acquired knowledge and education. As a result of developing ecological awareness, individuals form pro-environmental attitudes. The shaping of pro-environmental attitudes is a responsible approach to the ecosystem, involving adherence to the principles of ethical nature. These principles arise not only from the fear of punishment but, above all, from basing one's actions on a professed system of values. Ecologically conscious attitudes determine the individual's valuation of the surrounding world, as well as sensitivity to beauty and the willingness to engage in activities that collaborate with the natural environment, including those of an economic nature (Zuzek, 2017). Therefore, attitudes resulting from the development of ecological awareness reflect a predisposition to act with pro-environmental intent, i.e., the occurrence of pro-environmental behaviors in individuals.

The results of the earliest studies (Kinnear et al., 1974) confirm the relationship between consumer behavior and his concern for the environment, understood as an attitude related to the consequences for the environment (Antonides, van Raaij, 1998). The results of research by Antil (1984) and Roberts (1996) indicate the relationship between concern for the environment and environmentally friendly behavior. Mostafa (2013) created segments combining environmental concern with purchase intention, and Vining and Ebreo (1990) and Chan (1999) identified consumers' ecological knowledge, or "ecoliteracy", as a determinant of environmentally friendly behavior. The research of Chase (1991) and Peattie (2001) also indicate the connection between ecological awareness and environmentally friendly behavior, proving that people who care about the environment often changed their purchasing behavior in favor of more ecological. At the same time, according to Straughan and Roberts (1999), consumers who felt that their actions would solve environmental problems behaved more proactively.

According to these interpretation, existing tendencies toward positive perceptions of pro-environmental behaviors directly determine consumers' greater inclination to act in an ecological manner (Ertz et al., 2016), and therefore are a factor contributing to limiting the occurrence of the green gap.

3. Changes in Consumer Behavior in the Context of the COVID-19 Pandemic

In 2020, the emergence of the COVID-19 virus had a significant impact on virtually all aspects of human life. The outbreak of the pandemic brought about social and economic changes, the need to manage risk, and various government responses to the unforeseen situation, such as mobility and travel restrictions, strict control, and social distancing, etc. (Pató et al., 2022). The COVID-19 pandemic radically revolutionized daily life (telecommuting, online education, social distancing, a drastic decrease in mobility, the necessity of mobile payments, and virtual bills), greatly influencing the prices of goods and services and the functioning of the entire economy (Monge, Lazcano, 2022). Significant changes also occurred in consumption and leisure habits (Chi et al., 2022; Billore, Anisimova, 2021; Davies, 2020).

The context of COVID-19 also conditioned an environmental revolution and changes involving a shift in the focus towards strengthening the internal potential of environmental opportunities and sustainable development initiatives (Hutte et al., 2022; Pató et al., 2022; Amar et al., 2021). Sustainable development has become a managerial trend and has been incorporated into contemporary organizational strategies (Amui et al., 2017). The crisis triggered by the pandemic and the associated economic challenges forced numerous organizations to redefine themselves, rethink their mission, and prepare for the unexpected.

During this period, consumer attitudes and expectations also changed. The pandemic led to an increased respect for the natural environment and the need for even more conscious consumption (Chi et al., 2022; Ye et al., 2020). In addition to physical well-being (healthcare, safety, food security, etc.), social and psychological well-being became more crucial (entertainment, relaxation, magical moments of joy and pleasure, moments of nostalgia, etc.) (Kang, James, 2007). From a market perspective, this means seeking solutions that will have value for the consumer while simultaneously favoring the minimization of the negative impact of business on the natural (Wilczak, 2019) and social environment (Kozar, Oleksiak, 2022).

According to research, the COVID-19 pandemic has led to an increasing number of consumers believing that a brand's sustainable development efforts are a significant decision-making factor when making a purchase. Furthermore, consumer interest in this area continues to grow steadily. According to NielsenIQ (2022), 66% of respondents now consider sustainable development more important than it was two years earlier. Polonsky et al. (2014) suggest that consumers' motivation to consume healthy food has increased because they perceive it as something beneficial (a positive attitude towards the product) and helpful in maintaining good health in the long term (with a focus on the future). The pandemic should therefore naturally strengthen this motivation.

During the pandemic crisis, creating positive consumer attitudes towards the environment has become crucial. Green consumption, as a phenomenon related to avoiding products that cause significant environmental damage during their production, thereby posing risks to the health of consumers and their surroundings (Witek, 2014; Bylok, 2016), has become a significant part of the consumer movement aiming to halt processes that harm the natural environment, worsen the quality of life, and affect human health. The prevalent pre-pandemic model of unsustainable consumption in the form of consumerism was a cause of continuous and intensive environmental degradation and a significant reduction in the size of natural resources. Consumerism was, therefore, one of the major contributors to the ecological imbalance in the world (Kryk, 2011). The responses in the post-pandemic era emphasize the demands expressed by pro-environmental consumer movements regarding the adoption of attitudes and behaviors that correlate with environmental protection principles (shifting from ego-rational to eco-rational approaches). In addition to the most common and widely popularized pro-environmental demands in mass culture, there are also other more proactive actions associated with the eco-friendly behavior of consumers, requiring even greater engagement on their part. These actions include deepening knowledge about environmental protection and involvement in the activities of social environmental movements. According to Cachero-Martínez (2020), the pandemic caused by Covid-19 changed the mindset of many consumers. People became more aware of the dangers resulting from neglecting the planet. Before the pandemic, there was a noticeable increase in collective concern for the environment and sustainable development. However, the COVID-19 pandemic accelerated this process, and many people are determined to act in a more responsible manner. Although opinions from the supply side of the market regarding efforts for sustainable development may be divided (on the one hand, they may be pushed into the background because, in terms of economic survival during a crisis and the associated cost reduction, everything else becomes irrelevant), it is essential to remember that the market orientation area is always linked to understanding buyers' preferences and the reasons for their behaviors and opinions, which can influence their attitude towards products or services (Gregor, Kalińska-Kula, 2016). In this context, consumers' pro-environmental efforts prompt a reflection that the time has finally come to rethink everything, including sustainable development.

4. Summary

The outbreak of the COVID-19 pandemic was undoubtedly an exceptional situation that impacted all aspects of people's daily lives worldwide. The pandemic caused significant challenges in public health, economic and financial security, quality of life, and global food security. The global health crisis profoundly affected all aspects of daily life for populations, specifically influencing consumer dietary habits and lifestyles. The necessity for isolation and separation from the rest of society disrupted consumption habits across entire societies, and consumers found themselves in a new situation where most individuals began prioritizing their personal safety and the well-being of their families.

Although the era of COVID-19 brought devastating effects worldwide, attention should also be drawn to certain positive aspects derived from the pandemic period, setting the future direction for modern consumption. Trend of the greening consumption, resulting from the growing ecological awareness of society already observed before the pandemic, was strengthened as a result. The further expected result should therefore also be to reduce the green gap - the discrepancy between declared pro-ecological attitudes and actual consumer behavior. The COVID-19 pandemic has accelerated the development of the phenomenon known as green consumerism, and more people are now determined to act in a more responsible way. In times of pandemic crisis, it has become more important to support positive consumer attitudes towards the environment. Therefore marketers should also present products in terms of their future benefits for the consumer and the environment, thus increasing the awareness of current and future consumers about the long-term benefits of ecological consumption.

Concerning future ecological aspirations, undoubtedly, there is a need for a profound reflection on socio-environmental criteria for sustainable development. Numerous researchers emphasize that in the post-pandemic era, emphasis should be placed on the necessity of adhering to personal and social norms and shaping individual pro-social behaviors. In challenging times of dynamic environmental changes, pandemic conditions, and wars, it is particularly crucial to develop a responsible approach to environmental issues. Extracting lessons from the pandemic involves shifting consumer awareness towards a more sustainable perspective and further developing existing methods to prevent the degradation of the natural environment.

The paper is descriptive in nature and the contained considerations are based only on the analysis of secondary sources, which is a limitation of the study. It is therefore necessary to undertake further research based on primary sources. This research should primarily focus on developing a tool for measuring changes in consumer pro-ecological attitudes and behaviors following the COVID-19 pandemic.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

LEGAL CHANGES AND THE DEVELOPMENT OF THE EQUITY CROWDFUNDING MARKET IN POLAND

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Purpose: The aim of this article is to analyse and evaluate crowdfunding campaigns running up to the end of 2022 and to draw conclusions for the following years.
Design/methodology/approach: The research methods used in the article are literature analysis, inference and desk research analysis. The main research method to achieve the objective is the descriptive method supported by a critical analysis of the literature. Desk research (known as the cabinet method, desk data analysis) is a research method that involves compiling, analysing and processing information and data from existing sources. It can be further emphasised by the fact that in this method there is no influence of the researcher on the subject of the study. The study covered equity crowdfunding platforms operating in Poland (Polish and foreign).
Findings: On the basis of the analyses made, it can be concluded that the highest interest in share CF took place in 2021. In the following year, the situation began to change, due to the socio-economic situation and legal changes to its operation.
Research limitations/implications: It should be taken into account that the legal changes were only introduced at the end of 2023. This means that the data presented in the article does not yet reflect the changes introduced. Furthermore, it should be taken into account that the reaction of both crowdfunding platforms and originators and investors in Poland may differ from other EU countries.
Practical implications: The paper has practical implications for decision made by the crowdfunding platforms and companies interested in crowdfunding. It shows the main limitations for the crowdfunding market after the law changes.
Originality/value: The article presents recent equity crowdfunding transactions in Poland. Important changes in EU and Polish law that significantly affect the development of equity crowdfunding are presented. Unfortunately, it may turn out that the changes, although introduced to protect investors and order the market, may cause a significant limitation of these transactions.
Keywords: crowdfunding, crowdwisdom, sharing economy, ECF.
Category of the paper: general review, case study.

1. Introduction

The subject of the considerations undertaken in the article is the equity crowdfunding market in Poland, with a particular focus on the legal changes that were introduced in November 2023. The aim of the article is to analyse and evaluate crowdfunding campaigns implemented in 2019-2022 and to draw conclusions for the following years. The author primarily draws attention to the legal solutions introduced by the Regulation of the European Parliament and of the EU Council (2020/1503) on European equity crowdfunding providers and the Act of 7 July 2022 on equity and loan crowdfunding. The study deals exclusively with equity model crowdfunding platforms. The research methods used in the article are a descriptive method supported by a critical analysis of the literature and desk research analysis. Based on the analyses, it can be concluded that the highest interest in equity CF took place in 2021. In the following year, the situation started to change. There is a risk that the legal changes introduced at the end of 2023, combined with the socio-economic situation, may cause a decline in interest in equity crowdfunding.

Crowdfunding is not a new phenomenon. It has been developing gradually since the beginning of the financial crisis in 2007. However, it is worth noting that equity crowdfunding started to develop dynamically only a few years later. In Poland, the first equity crowdfunding collection took place in 2012. This form of raising capital has become an opportunity for new innovative companies with ideas that had no chance of traditional funding in the form of a bank loan. The investor has the opportunity to open up to a new market with a relatively low initial investment. In turn, those seeking capital can gain access to a larger pool of investors/donors and thus increase their chances of realising their projects and achieving their goals. Any equity crowdfunding transaction is fraught with risk and one should be aware that the return on capital may be negative.

2. Literature review

The idea of crowdfunding using online platforms has already been analysed and published in various countries. It can certainly be noted that the financial crisis was a factor that caused its rapid development (Kleeman, Voss, Rieder, 2008). What distinguishes crowdfunding from other forms of funding is, first and foremost, the possibility for more participants to get involved in a project (Belleflamme, Lamber, Schwienbacher, 2014). There are many publications in the literature on crowdfunding as a holistic phenomenon, encompassing all its models (Lambert, Schwienbacher, 2010), as well as those on only its selected forms, such as equity crowdfunding (Moritz, Block 2014, pp. 5-20). Crowdfunding would not have developed if it were not for the popularity of the internet and social media. These tools have made equity crowdfunding a viable alternative to traditional forms of external funding for businesses (Hornuf, Schwienbacher, 2017). Much of the literature includes a global analysis of all types of crowdfunding. The most important developments in equity crowdfunding are described by A. Schwienbacher (2019). An in-depth analysis of available academic articles on equity crowdfunding was conducted by Mochkabadi and Volkmann (2018) in their article. The importance of CF as a new source of entrepreneurial funding for unlisted startups and ventures was presented by Coakley and Lazos (2021).

The role of national policymakers in the development of equity crowdfunding markets through the proper implementation of European directives is presented by Cicchiello and Leone (2020). The results of the study show that countries correctly implementing European directives are able to avoid destabilising regulatory arbitrage phenomena, while countries with delayed and incorrect transposition may be exposed to severe destabilising effects on international financial markets with moderate growth of equity crowdfunding markets. For regulation introduced in the UK market, see Li (2022).

Ralcheva and Roosenboom (2020) conducted an analysis of 2171 equity crowdfunding campaigns launched between 2012 and 2017 on the world's two largest platforms Crowdcube and Seedrs. As part of their research, they pointed out that the CF market is maturing. They estimated forecasts for the development of the CF market. Data on the harmonisation of CF in Europe is presented in Advances in Crowdfunding (2020).

Research on regulation in the Italian market was carried out by Battisti, Creta and Miglietta (2020). In 2021, an international Delphi study on the functioning of CF in the coming years was conducted. The authors do not expect CF to disqualify other forms of financing and attract large corporations or institutional investors. However, they note that platforms will impose more stringent requirements on capital raisers, expand their services and innovate their business models (Tiberius, Hauptmeijer 2021). A study on the dissemination of CF information through social media (in particular Twitter) was presented by Battisti, Graziano, Christofi (2022). A systematisation of the CF concept was undertaken by Majewski (2020). The development of CF in Poland was presented by Gemra (2019), Kaczan (2019) and Kordela (2018). A cyclical publication on equity crowdfunding in Poland is led by Trzebinski (2022).

3. The essence of crowdfunding

Crowdfunding is kind of invitation for crowds understood as individuals or business entities, various social groups to support a specific initiative. This initiative is presented on the special crowdfunding platform. There can be distinguished four main types of crowdfunding – in two cathegories (Lambert, Schwienbacher, 2010):

Those that do not offer any financial return:

Reward-based crowdfunding – backers usually get small amounts of money in exchange of reward (a ticket, a specimen, an autograpf etc.). The most popular reward-crowdfunding platforms are Kickstarter and Indiegogo.

Donation-based crowdfuding – is used to raise money for a non-profit organisations, charity, societies, supporting sport and ecucation, people suffering from severe diseases or being in difficult life situation. Crowdrise and GoFundMe are popular donation-based platforms.

Those that propose some kind of financial return:

Equity-based crowdfunding – donors are really investors. They get a piece of equity capital in the company instead of reward. They usually invest more money than those who take part in reward and donation-based crowdfunding. They also expect financial return. In this case crowdfunding is not just an initiative for the single project but a tool to raise money for growth of a company. Crowdfunder, Beesfund or Crowdcube are examples of equity crowdfunding platforms.

Debt-crowdfunding – the people who support projects are lenders. Instead of equity capital or reward they make a loan and expect a refund with interest. The idea is that the backers borrow small amounts of capital from multiple of people.

In this article the equity crowdfunding projects and platforms will be analysed.

The undoubted advantage of crowdfunding is that by using an online platform, the project initiator has the opportunity to reach many investors potentially interested in the project. A factor to bear in mind is information asymmetry, when the project originator knows more about the project than potential investors (Bellaflemme et al., 2015). The asymmetry is compounded by the fact that sometimes the originators are in a completely different geographical location than the investors (Renwick, Mossialos, 2017).

Furthermore, it is worth noting the randomness of investors. Many times they have no experience with the topic of investment and make the decision to invest in an idea spontaneously (Agrawal et al., 2015). The consequence of this fact is that the relationship between the project originator and investors resembles that between principal and agent (Ley, Weaven, 2011).

Analysing the basic features of equity crowdfunding, it can be pointed out that it is a type of crowdfunding in which a backer invests in a specific venture in exchange for shares (stocks) in the share capital of the beneficiary company that will implement the venture.

Equity crowdfunding primarily enables small companies to raise capital from a large number of investors (communities) via the internet. It is a form of funding that can be seen as a way of solving the capital shortage problem for micro, small and medium-sized enterprises. In equity crowdfunding, investors support an originator who is working to develop his or her product or service, while expecting a monetary return when the investment agreement expires or the venture capitalist buys back the startup.

4. Equity crowdfunding in Poland

Equity CF has been developing in Poland since 2012. At that time, there was only one equity CF offering platform with one issue. In 2021, there were already 16 platforms offering equity CF, and in 2022. 13. Unfortunately, the situation may change in 2023 due to the entry into force of the legislation on the need for authorisation on 10.11.2023. The year 2021 can be considered a record year for Polish equity CFs both in terms of the number and value of transactions (Trzebinski, 2023).

There is no data yet on the functioning of equity crowdfunding in Poland in 2023, but one can already notice a decidedly lower interest in this form of raising capital by both originators and potential investors. The reason for this phenomenon is certainly the uncertain socio-economic situation (war in Ukraine, pocovid uncertainty or high inflation), but the key element is certainly the legal changes concerning the functioning of equity crowdfunding.

After 10 November 2023, the conditions for the operation of investment crowdfunding platforms in Poland have significantly changed. This is due to the implementation of Regulation (EU) 2020/1503 of the European Parliament and of the Council of 7 October 2020 on European providers of crowdfunding services for business ventures. In Polish law, these changes were introduced by the Equity and Loan Crowdfunding Act. Originally, the legislation was to be in force from November 2022, but based on the opinion of the European Securities and Markets Authority, the transition period was extended by 12 months. The most important obligation introduced is the authorisation of equity crowdfunding services. According to the ECSP European Crowdfunding Service Providers, a crowdfunding service provider can only be a legal entity based in the EU that has obtained a licence to carry out such activities from the competent supervisory authority in the country where it is established. For platforms, the need to obtain a licence entails more regulatory requirements or internal procedures, the obligation to examine the platform's investor profile or more information about the issue. Additionally, following legal changes, it is no longer possible to offer shares in limited liability companies, which was common in earlier years.

The authority competent to issue permits in Poland is the Financial Supervision Commission. However, it is worth noting that the obtained permit entitles to conduct activities throughout the EU. The Polish Financial Supervision Authority can stop the course of a funding offer in case of irregularities (preventive action), but react to collections already in progress (e.g. fines for the supplier or board members, or ordering the dismissal of the board member responsible for the violation).

Theoretically, as of 13/11/2023, companies can raise more funds from equity crowdfunding, as the limit for offerings without a prospectus has been raised from €2.5 million to €5 million. On the other hand, however, as of the time of going to press, only three entities have received authorizations from the Financial Supervision Commission for investment crowdfunding. These are finansowo.pl, Emiteo and GPW Private Market S.A. (ESMA, 2023).

Previously, the Polish equity crowdfunding market was not subject to restrictions; interested companies raised funds on the basis of regulations on public offering of shares, using the possibility of not publishing a prospectus or offering shares in limited liability companies.

Table 1. shows examples of equity crowdfunding implemented in Poland in 2019-2022, where the value of funds raised exceeded PLN 4 million. It is worth mentioning here that until November 2022, the maximum amount that could be raised without publishing a prospectus was the equivalent of €1 million (Smith, 2017).

The years 2018-2021 saw a steady increase in both the number of issues and their value (ZFP). Unfortunately, a slump in the market could be observed as early as 2022. This could have been caused by the general socio-economic situation, but also by the awareness of the change in regulations, which were originally scheduled to take effect in November 2022. Between 2012 and 2022, the average emission efficiency level was 60% (ZFP). In 2014 and 2017, the efficiency level exceeded 100%, but in 2022 it was the lowest in the analyzed period, at less than 35% (in 2020 and 2021 it was above average). Unfortunately, all indications are that 2023 will close at an even lower efficiency level.

Table 1.
Equity crowdfunding in Poland (over 4 mln PLN)

Name	Amount	Field of activity	Platform	Year
Start Space	4 550 000,00 zł	Marketing	CrowdConnect	2021
Kombinat Konopny	4 500 000,00 zł	Alcohol	Crowdway	2021
KTS Weszło	4 500 000,00 zł	Entertainment	Emiteo	2021
Alembik Polska S.A.	4 499 799,00 zł	Alcohol	Crowdway	2021
Tenczynska Okovita S.A.	4 436 158,00 zł	Alcohol	Crowdway	2021
CanPoland S.A.	4 400 000,00 zł	Technology	Crowdway	2021
United Label	4 400 000,00 zł	Games	CrowdConnect	2020
Mazurska Manufaktura Alk.	4 375 000,00 zł	Alcohol	CrowdConnect	2020
Wolf and Oak Distillery	4 202 820,00 zł	Alcohol	Beesfund	2020
Kombinat Konopny	4 200 000,00 zł	Technology	Crowdway	2020
Alembik Polska S.A.	4 185 000,00 zł	Alcohol	Crowdway	2020
Tenczynska Okovita S.A.	4 180 000,00 zł	Alcohol	Crowdway	2020
Browar za Miastem Sp. z o.o.	4 180 000,00 zł	Alcohol	Crowdway	2020
Tenczynek Bezalkoholowe	4 176 000,00 zł	Alcohol	Crowdway	2020
Pinta Barrell Brewing	4 149 846,00 zł	Alcohol	Crowdway	2019
GenXone	4 140 000,00 zł	Biotechnology	CrowdConnect	2020
SatRevolution S.A.	4 100 000,00 zł	Technology	Crowdway	2019
Farmy Fotowoltaiki	4 050 000,00 zł	Energy	Crowdway	2021
Wisła Kraków	4 000 000,00 zł	Sport	Beesfund	2019
GenXone	4 000 000,00 zł	Biotechnology	CrowdConnect	2019

Source: own elaboration based on platforms: www.crowdway.pl, http://crowdconnect.com, https://beesfund.com/

The six largest issues took place in 2021. (including four on the Crowdway platform, one on Emiteo and one on CrowdConnect). Currently, only one of these platforms (Emiteo) has issuance authority. Of course, as mentioned earlier, entities authorized in other EU countries can also operate in Poland, but given the historical data, the dominance of platforms operating strictly in the Polish market was significant. It is worth noting that no issue from 2022 was included in the list. This is due to the fact that all of last year's issues had a lower value - the highest amount raised was PLN 2,240,016 (Trzebinski, 2023).

The industries that dominate equity crowdfunding transactions in Poland are mainly: alcohol industry, biotechnology and technology. This is partly in line with trends across the EU, although there they are also dominant: clean energy sector and climate tech.

Despite the many ambiguities related to the application of the regulations governing equity crowdfunding, it is promising to note that as of November 2023, the non-prospect limit for issuers has been raised to €5 million, when using an intermediary crowdfunding platform with a business license. Originally the issuance limit was the equivalent of €100,000, it was raised to €1,000,000 in 2018, and to €2.5 million as of November 2022. This change will allow crowdfunding to raise the equivalent of €5 million over the next 12 months without the need to draft and approve a prospectus.

5. Discussion

Research on equity crowdfunding has been conducted in Europe and internationally for several years. Researchers are interested in both the motives of companies choosing to raise capital through this route and the motivations of investors. In recent years, researchers have also focused on changes in the approach of national authorities and the EU as a whole to the legal status of equity crowdfunding platforms (Schwartz, 2023). This is consistent with the research conducted in this article. Recent changes introduced in the EU may change the perception and accessibility of the ECF market, especially in countries such as Poland. Authors in other studies also highlight the importance of information resource management, where different sources of information may require different disclosure rules (Dao et al., 2023).

In the discussion, it should be emphasized that the development of the equity crowdfunding market in Poland is part of a broader trend in the European Union, which has been further supported by the introduction of the Regulation of the EU Parliament and Council (2020/1503). Aimed at facilitating access to funding through crowdfunding platforms, the regulation introduces a uniform legal framework for equity crowdfunding across the EU. This is important because it provides greater transparency and legal security for investors and entrepreneurs. The likely assumption of policymakers was to introduce this regulation in order to increase trust and investment interest in crowdfunding in member states. What caused a significant reduction in interest in ECFs in Poland in 2023 has not slowed down companies and platforms in Europe. Platforms have long been aware of the need to change and adapt to the European Commission's requirements. Many platforms complied with these requirements back in 2022. Unfortunately, as the situation of the Polish market has shown, it may turn out that the introduced solutions, at least in the short term, may cause a decline in interest in equity crowdfunding. In conclusion, the analysis of the equity crowdfunding market in Poland, in the context of the new EU regulations, indicates the important role of this form of financing in the EU financial ecosystem.

6. Conclusions

Despite the many uncertainties regarding the application of the regulations governing equity crowdfunding, it is promising that the non-prospective limit for issuers has been raised to €5 million as of November 2023 when using an intermediary crowdfunding platform with an authorization to operate. Originally, the issuance limit was the equivalent of €100,000, raised to €1 million in 2018, and to €2.5 million from November 2022. This change will allow for crowdfunding to raise the equivalent of €5 million over the next 12 months without the requirement to draft and approve a prospectus.

The study's conclusions underscore the importance of aligning domestic regulations with EU standards, which in the long run can further develop the market and make it more attractive to international investors. The EU Regulation (2020/1503) opens up new opportunities for the crowdfunding market, while posing challenges related to its implementation and monitoring its impact on local financial markets.

In the context of further research, it is crucial to analyse the impact of the EU Regulation (2020/1503) on the long-term development of the crowdfunding market in Poland and other member states. It would be worthwhile to study how different countries are implementing this regulation and what are the effects of these actions. It would also be important to understand how companies and investors are responding to these changes and how they are adjusting their financing strategies. A study that includes an analysis of the impact of these regulations on the innovation and competitiveness of European financial markets would add value. Further research should also address how the ECF market will develop and whether in the longer term it is possible that inverstors will move their savings from bank deposits to ECFs.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

THE ROLE OF ENTITIES PROVIDING ACCOUNTING SERVICES IN THE IMPLEMENTATION OF STRUCTURED ELECTRONIC INVOICES

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Purpose: The aim of this article is to enhance the operational processes (reduce processing time, improve management) of accounting offices in the implementation of structured electronic invoices. The article analyzes the significance of these entities in the context of transitioning from traditional paper invoices to electronic invoices, and identifies the benefits, challenges and solutions associated with their involvement in this process.
Design/methodology/approach: The research utilizes a methodology based on literature analysis and a questionnaire survey among enterprises providing accounting services, aiming to comprehend their perspective in the context of implementing structured electronic invoices.
Findings: The outcome of the research involves the creation of three scenarios for dealing with clients of accounting offices in the implementation of structured electronic invoices.
Research limitations/implications: The research is based on a limited range of respondents, which may affect the overall representativeness of the results. Furthermore, rapidly evolving technologies and regulations may impact the relevancy of some findings in the future.
Practical implications: The findings of this study suggest that collaboration with entities providing accounting services can significantly facilitate businesses in the process of implementing structured electronic invoices. Companies should consider the benefits of external support in order to effectively transition to new solutions.
Originality/value: The article contributes to the discussion about the changing role of entities providing accounting services in the digital transformation of B2B services.
Keywords: Digital transformation, accounting services, e-invoice, e-business.
Category: Research article.

1. Introduction

In the era of digitization, business processes are undergoing dynamic changes, and digital transformation becomes not only a possibility but also a necessity. One of the areas experiencing this transformation is the way of issuing and storing invoices. In Poland, the National e-Invoice System (Polish abbreviation KSeF) has been in operation since January 1, 2022, aiming to facilitate the invoicing process by introducing structured electronic invoices. Although this system is currently optional, it will become mandatory for many enterprises from July 1, 2024 (Act of June 16, 2023). The invoice, being a crucial document in economic trade, serves for settlements and confirmation of trade transactions (Papazoglou, 2003). The definition of an invoice, according to applicable legal regulations, includes a number of elements that must be included for it to be recognized as an accounting document. In the context of the KSeF introduction, understanding the role and significance of invoices becomes key for enterprises and entities providing accounting services. Invoices are documents issued primarily for VAT purposes, hence the issues concerning invoices are regulated in the VAT Act (Act of October 29, 2021). The VAT Act defines who is required to issue an invoice for which transactions, in what mode it should be issued, what form it can take, what data it should contain, how it should be corrected, and stored.

The introduction of KSeF is a response to the growing demand for digitization of business processes, which aligns with the global trend towards digitalization. European Union directives (Directive 2006/112/EC), oblige member states to promote and implement electronic document flow in economic trade, aiming to enhance the efficiency and transparency of business processes. The VAT Act should comply with EU law in the area of invoicing, including the VAT Directive.

In the global context, Poland joins the group of countries that actively promote and implement digital solutions in the invoicing area. The introduction of KSeF aligns with the global trend towards digitizing business processes, aimed not only at increasing efficiency but also promoting transparency and sustainable development through the reduction of paper usage. For entrepreneurs and accountants, the new way of issuing and receiving invoices represents another technological revolution. As most micro and small enterprises use the services of accounting offices, one can ask whether the introduction of a new invoicing system will be a challenge for accounting offices and how to address this challenge?

The aim of the study is to improve the operation of accounting offices (reduce processing time, enhance management) in the implementation of structured electronic invoices in Poland. During the research process, studies of both Polish and foreign literature were conducted. The literature review utilized the methods of induction and deduction. Subsequently, in the empirical study, synthesis and analysis methods were employed, using a survey questionnaire as the research tool. The pivotal aspect of the study involves assessing the benefits, challenges, and potential solutions concerning the digital transformation by owners of accounting offices. To this end, the following research questions were formulated:

1) Will entities providing accounting services issue structured invoices on behalf of their clients (businesses)?
2) Are entities providing accounting services inclined to change the circulation and processing of documents from traditional to digital?
3) What collaboration scenarios between entities providing accounting services and their clients (businesses) are considered in the context of implementing structured invoices?

The conducted study enabled the development of collaboration scenarios between accounting offices and their clients, which is particularly crucial for the effective implementation of the e-invoicing system. The article is divided into several sections, including an introduction with methodology, results, conclusions, literature, and limitations and suggestions for further research, aiming to provide the reader with a comprehensive understanding of the researched issue. In the introduction, the background of the problem and the research objective have been presented, serving as a starting point for further analysis. The literature review section encompasses an analysis of existing research and literature on the digitization of accounting processes and the introduction of structured electronic invoices. The methodology section presents the research design and the questionnaire survey, which was used to collect data. The results section includes an analysis of the data collected during the study, with an emphasis on identifying main trends and findings. The discussion section will interpret the research results in a theoretical context and discuss potential challenges and solutions related to the implementation of structured electronic invoices. The concluding section of the article, summarizes the main points of the discussion and suggests directions for further research. The study is designed with a focus on understanding and analyzing the role of entities providing accounting services in the process of implementing structured electronic invoices. It is based on a combination of literature analysis and empirical research, which includes a questionnaire survey among enterprises providing accounting services.

2. Scope of documents included in the KSeF and possibilities for their digital processing

The National e-Invoice System encompasses the following types of documents (Fig. 1).

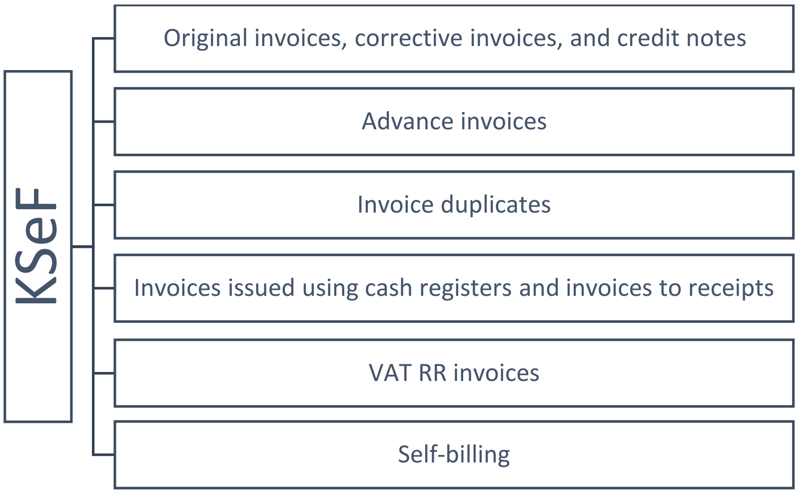

Figure 1. Scope of the National e-Invoice System.
Source: Own study.

Taxpayers subject to the obligation of using the National e-Invoice System (KSeF), through its aid, will be able to issue not only original invoices but also corrective invoices. Both types must, in principle, take the form of a structured invoice (Art. 106ga and Art. 106j para. 4 of the VAT Act). For advance invoices, starting from September 1, 2023, a regulation applies according to which taxpayers are not obliged to issue an advance invoice if the entire payment or part of the payment received before the transaction was made in the month in which the transaction took place (Art. 106b para. 1a of the VAT Act). In such a situation, the taxpayer merely issues one sales invoice for the entire amount due. With the introduction of the obligatory KSeF, it is assumed that invoices will not be destroyed or lost. A duplicate of the invoice will only be possible for invoices issued outside the National e-Invoice System. In relation to invoices issued using cash registers and invoices to receipts, it is assumed that from January 1, 2025, all of them will have to be issued via KSeF. In general, the obligation to self-invoice through the National e-Invoice System also includes documents issued in the self-invoicing mode, where the buyer issues the invoices, and invoicing on behalf, where a third party issues the invoices. As results from Fig. 1, the scope of the KSeF includes most of the documents in economic circulation. Hence, the challenge is to implement solutions ensuring their efficient processing. Digital invoice processing is a procedure that is gaining popularity in the context of global digitization. Thanks to modern technologies, companies can automate many aspects of the invoicing process, which translates into increased efficiency and error reduction (Zniszczoł, 2016). Digital invoice processing can be defined as a process in which traditional paper invoices are replaced by their electronic equivalents. This process encompasses not only the invoices themselves but also other documents related to commercial transactions, such as orders or delivery confirmations (Pieńkosz, 2022). In recent years, a dynamic development of technologies related to digital invoice processing has been observed. Initially, this process was limited to scanning paper invoices and storing them in a digital form. Currently, thanks to technological advancement, it is possible to automatically generate, send, and process invoices electronically, which significantly accelerates and simplifies the invoicing process (Hellich, Wielgórska-Leszczyńska, 2021). Modern technologies, such as OCR (Optical Character Recognition), AI (Artificial Intelligence), or blockchain, significantly support the digital invoice processing procedure, enabling automation of many processes and increasing the security and reliability of systems (Sokołowski, Niedbał, 2022). While digital invoice processing brings a number of benefits, including increased efficiency and error reduction, it also poses certain challenges. Among the most important are the need to adapt new technologies and ensure data security (Zakrzewska, Jarosz, 2022). One of the key aspects of digital invoice processing is its automation. With tools like Optical Character Recognition (OCR), companies can automatically capture data from invoices, significantly speeding up the processing procedure (Grządka, 2021). Among the tools supporting process automation, the ERP (Enterprise Resource Planning) systems stand out. They integrate various business functions, including finance and accounting management, into one system. Other tools include the OCR systems (Optical Character Recognition) for automatic data capture from invoices and the Robotic Process Automation (RPA) for automating routine tasks (Januszewski et al., 2021). Automation allows for a significant acceleration of processes related to invoicing. Thanks to automatic data capture from invoices, companies can significantly shorten the time needed to process an invoice, which translates into faster closing of accounting months and improved cash flow (Spoz, 2014). Process automation also allows for the reduction of errors, which often occur in manual invoice processing. With automatic data capture, the risk of data entry errors is significantly reduced, resulting in greater accuracy of accounting data (Nykiel, 2018). Process automation can also bring significant cost savings. By reducing the time needed to process invoices and reducing the number of errors, companies can significantly reduce operational costs related to the invoicing process (Glogić et al., 2023). Despite many benefits, process automation also comes with certain challenges. The introduction of automation tools may require significant financial investment and time for implementation and employee training. Additionally, companies must also pay attention to issues related to data security and compliance with legal regulations (Łuczak, 2016). Digital invoice processing enables the integration of various accounting and financial systems, allowing for easier data and process management. Selected literature emphasizes that system integration is a key element in the digitalization process (Kiełtyka, Charciarek, 2019). Through process automation, digital invoice processing increases data accuracy and reduces errors, which is often highlighted in international literature (Kokina, Blanchette, 2019). Digital invoice processing allows for real-time data access, enabling faster decision-making and better financial management of the company (Avira et al., 2023). Both national and international literature also highlight the aspect of sustainable development. Digital invoice processing allows for a reduction in paper usage, which is in line with global trends towards sustainable development (Warke et al., 2021). Despite many benefits, digital invoice processing also comes with certain challenges. The literature points to barriers such as lack of appropriate digital skills, resistance to change, or concerns related to data security (Marcon et al., 2019).

3. Research methodology

The aim of the study was to enhance the functioning of accounting offices (reduce processing time, improve management) in the implementation of structured electronic invoices in Poland. The opinions of accounting office owners regarding the transition from traditional paper invoices to electronic invoices were analyzed, and the benefits, challenges, and solutions associated with their involvement in this process were identified. The research tool used was a survey questionnaire (Google Forms) directed to owners and management of accounting offices through social media in the third quarter of 2023. Semi-open-ended questions were employed with an "other" response option (if any?), closed-ended questions, and measurement scales including, among others, nominal scales (including Likert scales). The assumed number of accounting offices in Poland was 70 thousand (GUS, 2023), for which the required sample size in the research was determined to be 96 (https://www.naukowiec.org/dobor.html). The survey questionnaire was posted on the Facebook social media platform in a group dedicated to accounting office owners, which had 3.6 thousand members. In total, 74 completed survey forms were received. Upon receiving the returned questionnaires, their correctness was verified. Numerical data were encoded in a matrix in the form of an Excel file, which also included data from the electronic survey collection system.

4. Research results

The research was conducted on a group of 74 owners and management of entities providing accounting services, of which 48 individuals (64.9%) were women and 26 were men (35.1%). In response to their professional experience, the majority of respondents (42.3%) indicated a range of 11-15 years of operation, 16 years or more (28.6%), 6-10 years (11.7%), 3-5 years (7.8%), and 0-2 years (9.6%). The aim of the subsequent question was to assess the degree of digitization of accounting services (Fig. 2).

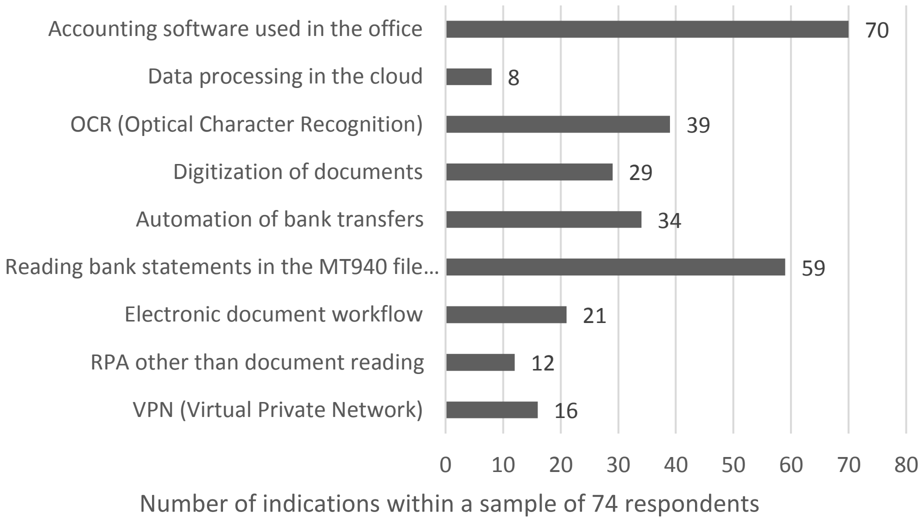

Figure 2. Digitalization tools used by entities providing accounting services.
Source: Own study.

Thereafter, respondents were asked about the benefits of digitization (Fig. 3).

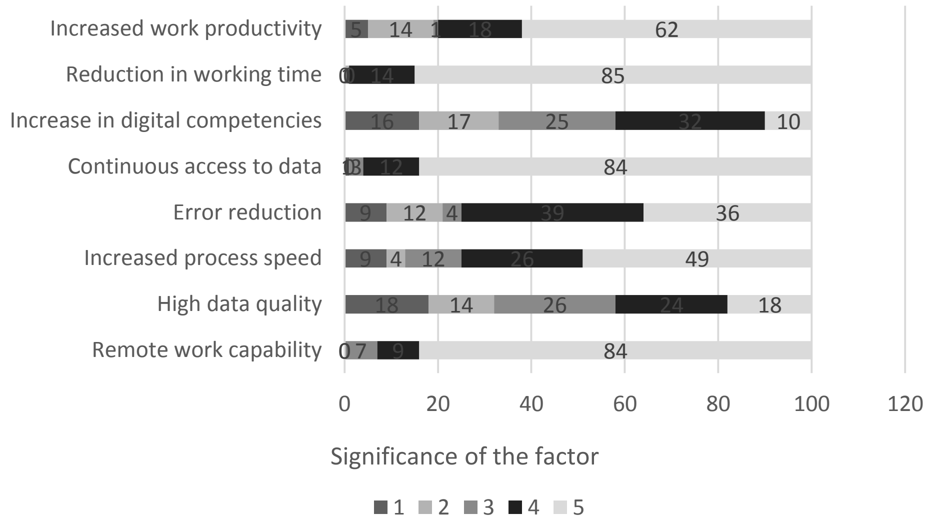

Figure 3. Benefits of digitization in accounting service entities.

Source: Own study.

The aim of the subsequent question was to understand the role that accounting service entities plan to adopt in the process of handling structured electronic invoices. Respondents were asked whether they currently issue or are considering issuing sales invoices on behalf of their clients (Fig. 4).

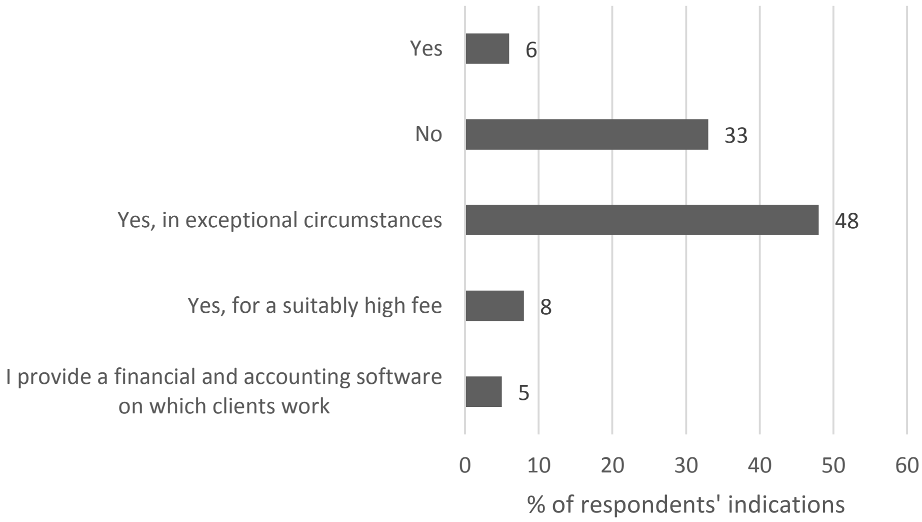

Figure 4. Handling Sales Invoices on Behalf of Clients in Accounting Service Entities.

Source: Own study.

In the last question, respondents expressed their opinion on the most appropriate model of cooperation with clients when handling structured electronic invoices. Several proposed cooperation models were presented in the question, and respondents were also allowed to indicate their own solutions (Table 1).

Table 1.
Scenario of Handling Clients in the Context of Structured Electronic Invoices Service

Proposed Client Interaction Scenario	% of Respondent Selections
Client independently retrieves invoices from KSeF, verifies, accepts, and sends them to the accounting office	56
The office, acting on behalf of the client, retrieves, accepts, and sends them for substantive approval	3
The office retrieves invoices from KSeF on behalf of the client and immediately books them, assuming they are related to the conducted business activity	4
The office retrieves invoices from KSeF on behalf of the client, with their authorization, and obtains approval for invoices that raise concerns	5
I am considering a mixed model, where some clients will provide invoices themselves, while for others, the office will retrieve them	17
I am still uncertain	11
After the client verifies and approves sales and purchase invoices, the accounting office imports the invoices from KSeF into the F-K system	4

Source: Own study.

Respondents, in response to the question, mostly (56% of responses) adopted a cautious scenario for dealing with clients in the process of handling electronic invoices. 17% of respondents consider a mixed scenario of action, where the chosen approach will depend on the quality of the existing cooperation with the client. The following Conclusions section provides scenarios for the accounting offices dealing with clients while implementing structured invoices, which are based on the conducted research by the author.

5. Conclusions

Accounting offices are external entities in relation to their clients. Mutual relations here primarily involve responsibility for the quality of the source documents (clients) and responsibility for processing documents (accounting offices). The implementation of electronic invoices will affect the transfer and acquisition of invoices for the purpose of their inclusion in tax and accounting records. However, accounting offices will still be obligated to analyze and determine elements such as the moment of VAT tax liability, the date of revenue recognition, the date of cost incurrence, or the place of its origin. One of the fundamental issues that accounting offices must consider is who and to what extent will be responsible for retrieving documents from the KSeF and forwarding them to the accounting office. The research indicates that accounting offices will not take on the obligation of issuing electronic invoices on behalf of their clients. The affirmative response to the research question about the willingness to change the circulation and processing of documents in accounting offices was confirmed. Among the factors that imply a change, remote work opportunities (84% significance), continuous access to data (84% significance), and reduced working time (85% significance) should be mentioned. In response to the final research question, three scenarios of cooperation between accounting offices and clients in the implementation of electronic invoices can be distinguished.

The first scenario involves the direct retrieval of documents by companies and their transfer to the accounting office in a mutually agreed-upon form. The advantage of this solution is the minimization of obligations on the part of accounting offices and the certainty that the company (the client of the accounting office) provides only those documents that will actually be related to its business activity. It is worth noting here that the KSeF system may include invoices documenting expenses that do not constitute deductible costs or those that were issued by mistake. The disadvantage of the proposed solution is the complete dependence of accounting offices on clients in terms of providing documentation for processing in financial and accounting systems (as is currently the case). The visualization of the first scenario is included in Figure 5.

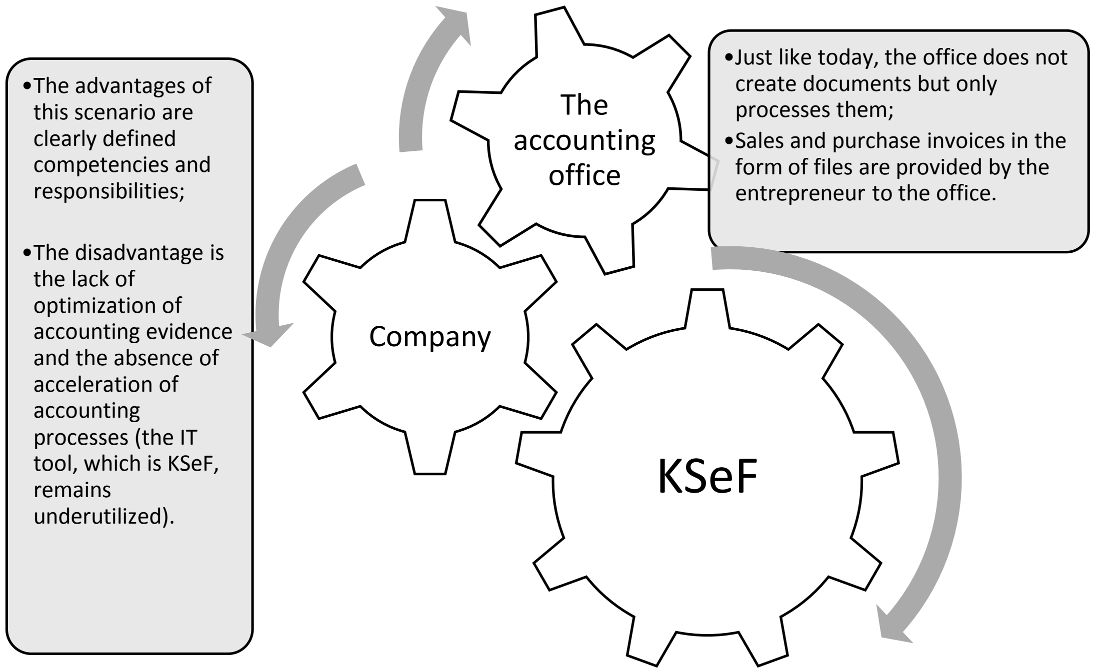

Figure 5. First scenario for implementing KSeF in accounting offices.

Source: Own study.

The second scenario, which is the most demanding for accounting offices, assumes that accounting offices, based on special authorization to handle KSeF, log in and independently retrieve or even issue documents. This scenario gives accounting offices the greatest freedom but also consumes a lot of time. Accounting offices bear various risks in this scenario, including errors in issued invoices on the part of businesses and the risk of generating payment identifiers. The graphical representation of this scenario is shown in Fig. 6.

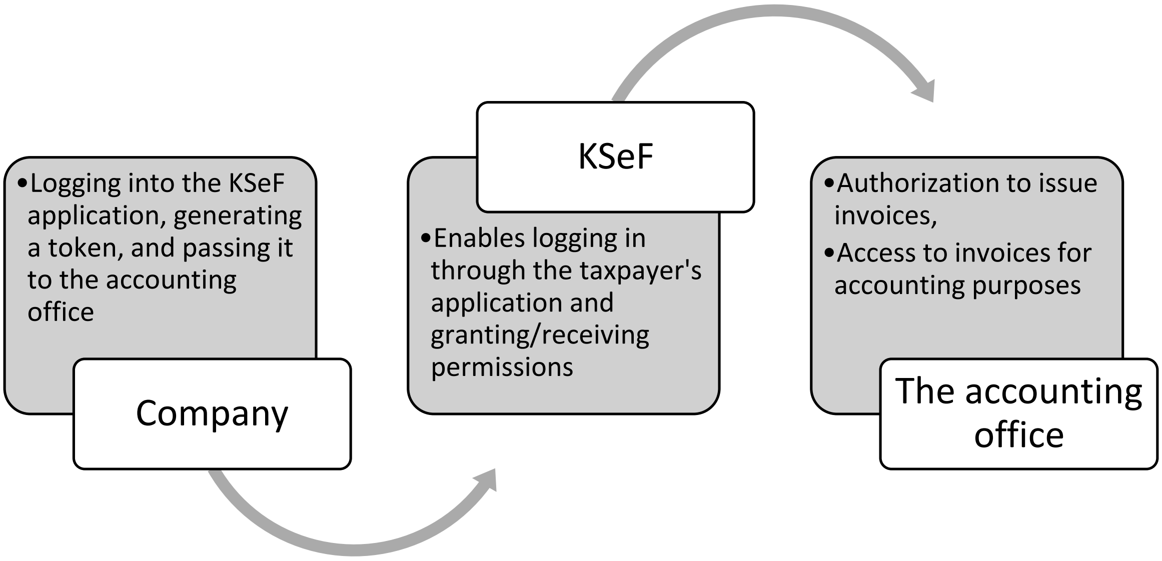

Figure 6. Second Scenario of Implementing KSeF in Accounting Offices.

Source: Own study.

The third of the proposed scenarios is an intermediate solution. Here, it is assumed that businesses generate a special token and provide it to accounting offices. Accounting offices then input the token into their financial and accounting systems and set up cycles in which invoices are automatically retrieved from KSeF. This scenario does not significantly involve the accounting offices in the KSeF activities. However, there is a risk of obtaining documents from the system that are not related to the business activities of the serviced companies or that have been generated due to errors or mistakes. As a disadvantage, there is also the issue of correctly allocating costs based on their justification, place of origin, or assignment to specific projects. The graphical representation of this scenario is shown in Fig. 7.

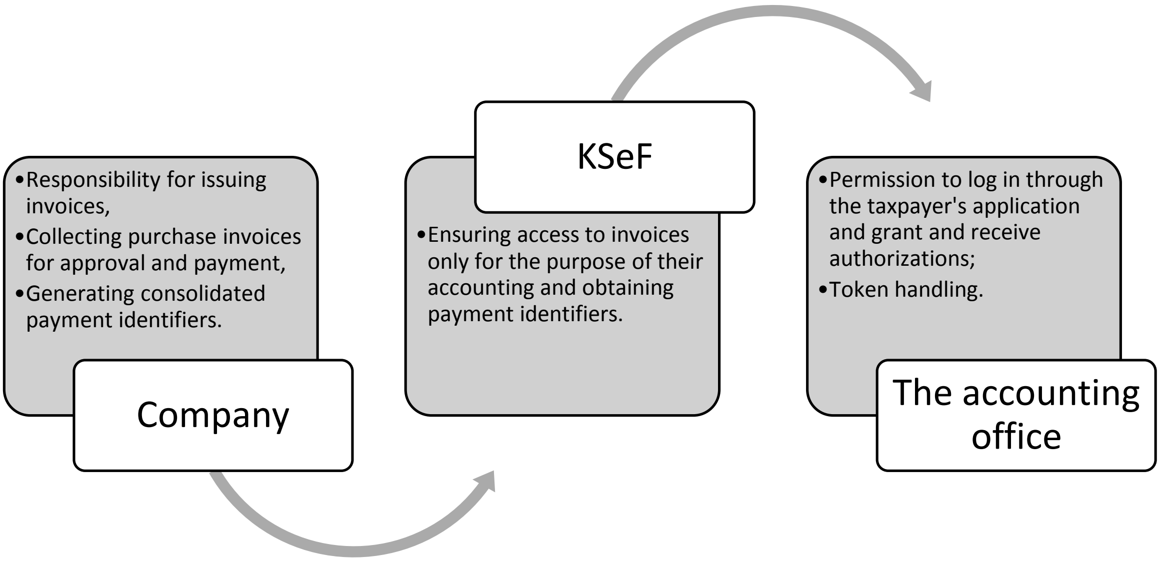

Figure 7. Third scenario of implementing KSeF in accounting offices.

Source: Own study.

According to the respondents (accounting offices), KSeF does not bring significant substantive changes. The obligation to issue and receive invoices from the National e-Invoice System still rests with the enterprises. Respondents see an opportunity in speeding up accounting processes through the retrieval of all invoices from KSeF. Undoubtedly, the implementation of an appropriate financial and accounting information system that supports communication between KSeF, the office, and the enterprises is essential. It enables the alignment with clients on the form of approval for cost invoices. The implementation of KSeF requires a revision of existing agreements for accounting services. It is worth noting that the agreement between the office and the enterprise is a B2B contract based on partnership, not a relationship of subordination.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

MODEL TEACHER TRAINING SCHOOL IN THE LIGHT OF THE PROJECT EVALUATION RESULTS SELECTED

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Purpose: The aim is to evaluate the operation of the Model Teacher Training School drawing on the example of the “Model Teacher Training School in Niemcz and Osielsko” project completed against the project evaluation findings in terms of the directions of continuing the operation of the teacher training school and its effective impact on supported schools.
Design/methodology/approach: The article presents a case study of a Model Teacher Training School in Poland as a modern teacher competence support system. There are identified some selected aspects of the operation of the teacher training school established as part of the project cofounded by the EU. Project evaluation research process is discussed and selected evaluation research findings are presented for the sample of 55 teachers, including headmasters and deputy headmasters of seven supported schools. The research process has involved diagnostic methods and tools: CAWI (Computer Assisted Web Interview), which uses the Microsoft Forms tool. Selected CATI qualitative research findings have been presented for a sample of 8 respondents, including the representatives of the Beneficiary and the Partner, headmasters and deputy headmasters of the Training School, the representatives of the higher education provider and the supporting institution.
Findings: The school serving a function of the Training School performs actions focused on a teacher competence development in Supported Schools in selected forms and work methods. The idea of the modern approach to teacher competence enhancement is a cooperation of the Training School with experts of educational institutions: the higher education provider, supporting institutions and the education superintendent authority. It is also valuable every year to include new Supported Schools into the supporting process and improving the forms and methods of working with teachers. It is possible to the evaluation of the actions performed the findings of which facilitate a further determination of directions of continuing the operation of the Model Training School for the years to come.
Research limitations/implications: Compliant with the Training School Model, the operation of teacher training schools should be subject to annual evaluation process, which will enhance the quality of the actions by increasing the correctness, effectiveness, usefulness, efficiency and lifespan. Some limitation to undertaking the research process is a problem with financing the evaluation research which must be financed outside the project.
Practical implications: The evaluation research findings, including the expectations of supported schools’ teaching and management staff, have facilitated a further determination of support forms which should be offered by the teacher training school throughout the project, which is for the upcoming 5 years. The forms of support which should be continued throughout

the project life offer a possibility of using ready-made teaching aids, a participation in discussion forums, sharing blogs and methodology workshops. The teachers have slightly lower expectations in terms of continuing their participation in conferences and seminars, working on-line on the doskonaleniewsieci.pl platform, taking part in demo classes, consultations and stationary cooperation networks.
Social implications: The teacher training school operation will affect the social domain as the teacher training school, by offering an adequate support to the teachers and including new schools into cooperation, will enhance a development of the key student competences, especially foreign languages learning, mathematics, natural sciences, ICT and teachers sharing their knowledge and skills.
Originality/value: The teacher training school model presented as well as the evaluation research findings provide a recommendation for practical professional development of primary school teachers in Poland.
Keywords: teacher training school, teachers, professional competences, project, evaluation.

1. Introduction

The priority of the education policy in Poland is to provide an efficient education system and life-long teacher professional development system which will respond to the real needs of the school and which will facilitate teachers' professional competences enhancement and work tools development. Schools should develop towards learning organizations which, by subjecting themselves to evaluation, will be improving their development (Hajdukiewicz, Wysocka, 2016, p. 7). At the same time, it is important to promote a self-study system with teachers (Fila, Matuszczak-Rybińska, 2015, p. 43), and the key role in that process should be played by headmasters (Fischer, Taylor, 2012, p. 235; Kordziński, 2010, p. 10). A high teacher effectiveness is built not only thanks to training participation but also to cooperation with other teachers as well as thanks to a possibility of participating in projects at school (Główne wyniki badania TALIS, 2013).

To meet those needs, the Centre for Education Development (ORE) has developed a concept of a modern teacher education system in Poland; Model Teacher Training Schools, which have been co-financed as part of the Operational Programme Knowledge Education Development (PO WER 2014-2020, 2021). The authorities running schools submitted projects for competitions organised by the Ministry of National Education in Warsaw and received funds to establish the Model Teacher Training Schools. Currently (until 24.10.2023), the European Social Fund has financed 42 teacher training schools all across Poland, including Model Teacher Training School in Niemcz and in Osielsko.

Compliant with the model, the Teacher Training School stands for "a set of planned actions of schools (teacher training schools and cooperating schools) as well as institutions supporting the teacher and student learning process (…)", "the school in which the future teachers will be experiencing a practical verification of the theory learned during studies and professionally-active teachers can develop their working tools in cooperation with other teachers (…), "at the teacher training school, the student supervised by the teacher will face the challenge of teaching practice in the areas of education and upbringing, and the teachers will be developing their working tools and share their ideas with other teachers" (Model szkoły ćwiczeń, 2019, p. 4).

The key assumptions of the operations of the Model Training Schools is to select at least one school of general education to serve as a Training School and to perform actions focused on a development of teacher competences compliant with the needs of the Supported Schools with selected forms and methods of work (e.g., methodology workshops, cooperation networks, conferences, demo lessons). Throughout the support, the Training School should cooperate with experts of the local education community; the higher education provider, supporting institutions (teacher development facilities, psychology and pedagogy counselling centres, teacher training libraries) and the education superintendent (Klemke-Pitek, 2022).

The establishment of teacher training schools in the commune depended on the effectiveness and involvement of the school-running authorities as the local authorities together with the teacher development facilities, teacher training libraries and psychology and pedagogy counselling centres and with higher education providers initiate cooperation and plan joint projects to satisfy the needs of the local education development (Gocłowska, Soćko, 2015, p. 43). The idea of a modern approach to teacher training is a cooperation of the Training School with the resources of the education community, increasing the impact area every year by including new schools into the support process and a permanent improvement of the forms and methods of working with the teachers offered. Therefore, the operation of the teacher training schools, due to their innovative nature, should be subject to permanent evaluation to specify which of the teacher support solutions were most effective. The evaluation should provide useful knowledge to determine the directions for continuing the operation of the new teacher training schools and their effective impact on supported schools (Mizerek, 2010, p. 8).

The aim of the research, namely to evaluate the operation of the Model Teacher Training School drawing on the example of the "Model Teacher Training School in Niemcz and Osielsko" project completed against the project evaluation findings in terms of the directions of continuing the operation of the teacher training school and its effective impact on supported schools, is exceptionally valuable and justified. The project evaluation findings, especially the teaching staff, have facilitated a further determination of directions of continuing the operation of the Model Training School and the expected support forms which should be offered throughout the project life.

2. "Model Teacher Training School in Niemcz and in Osielsko" project characteristics

As part of the Model Teacher Training School in Niemcz and in Osielsko" project, the schools, namely the Agata Mróz Primary School in Niemcz and the Polish Olympians Primary School in Osielsko, operate as the teacher training school and execute the teachers' professional development and education tasks, with the support process covering seven cooperating schools. The teacher training school cooperates with external specialists and uses the resources of the institutions of the local education environment effectively (Zasady współpracy szkoły ćwiczeń, 2019, p. 2), which is demonstrated below (Figure 1).

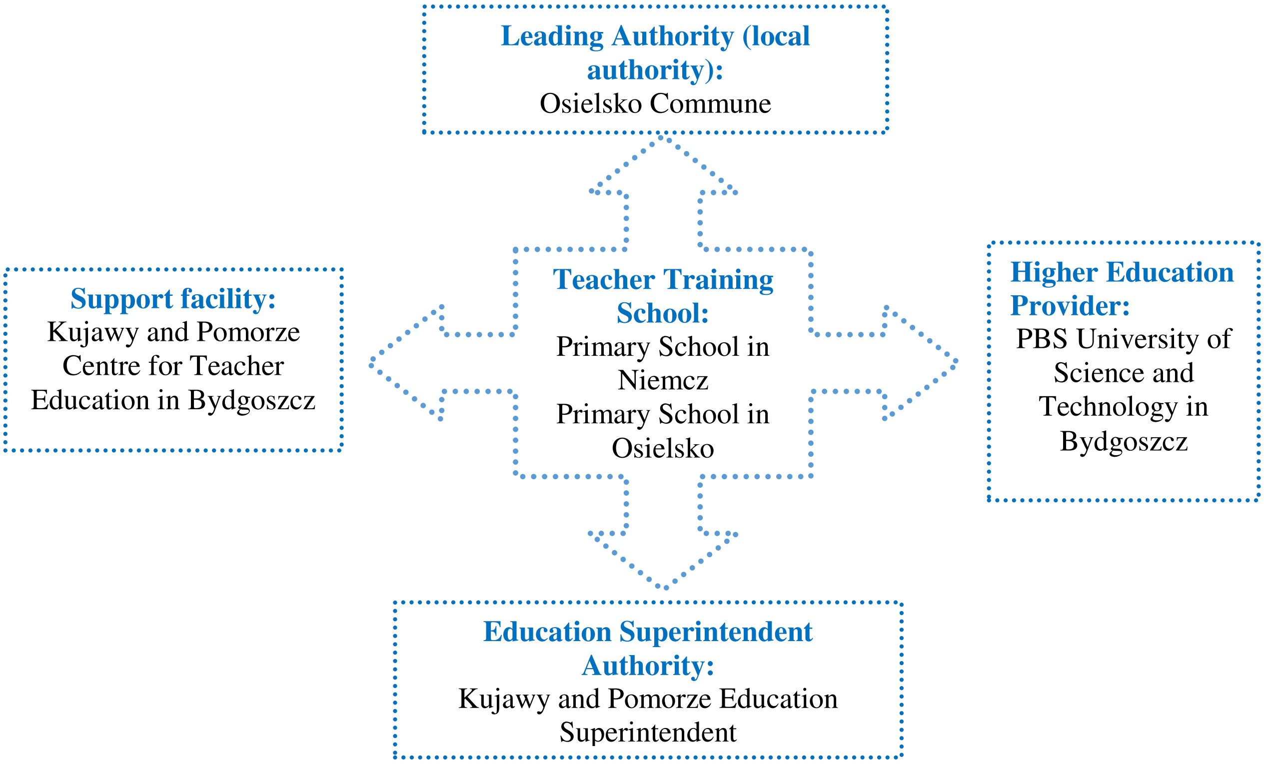

Figure 1. Breakdown of institution cooperating with the newly-established Teacher Training School.

Source: own study based on the application for cofounding "Model Teacher Training School in Niemcz and in Osielsko".

The "Model Teacher Training School in Niemcz and in Osielsko" project plans a number of actions leading to the accomplishment of the primary aim, "Enhancement of the operation of the school support system in terms of developing the students' competences which are crucial and the skills which are universal on the job market by preparing, supporting and awarding the teacher training school status to the Agata Mróz Primary School in Niemcz and to the Polish Olympians Primary School in Osielsko, thanks to the execution of comprehensive and complementary tasks: proving further equipment to subject classrooms in the teacher training school (task 1), enhancing the competences of 52 headmasters and teachers of the teacher training school in terms of teaching methods and forms (task 2) and the professional development of 62 headmasters and teachers from 7 cooperating schools in terms of the students' key competences development (task 3) by 31.12.2023". The key elements of the project the Model Training School has been established with are presented in the table below (Table 1). It was most precious to provide additional teaching equipment and aids from the EU funds to the subject classrooms of the Training School (Task 1) and to strengthen the Training School teaching staff through couching, workshop training and the teaching materials developed (Task 2). The Training School providing the adequate supporting actions focused on enhancing the competences of the Supported Schools teachers has been financed from Task 3.

Table 1.
Key elements of the teacher training school established as part of the project

Item	Specification	Characteristics
1.	Operational Programme	Knowledge Education Development 2013-2020
2.	Priority Axis	Effective public policies on the job market, for the economy and for the education market
3.	Measure	Measure 2.10 "High-quality education system"
4.	Competition	POWR.02.10.00-IP.02-00-003/19
5.	Beneficiary	Osielsko Commune
6.	Partner	Euro Innowacje sp. z o.o.
7.	Project budget	PLN 1 346 964.06
8.	Lifespan	1.01.2021-30.09.2022
9.	Teacher Training School	– Agata Mróz Primary School in Niemcz – Polish Olympians Primary School in Osielsko
10.	Supported Schools	– Irena Sendlerowa Primary School no 58 in Bydgoszcz – Henryk Sienkiewicz Primary School no 37 in Bydgoszcz – Wincenty Wiernikowski Primary School no 36 in Bydgoszcz – Primate Father Stefan Wyszyński Primary School no 20 with Inclusive Sections in Bydgoszcz – Marian Rejewski Schools; Primary School in Ostromecko – Arkady Fiedler Primary School no 56 with Inclusive Sections in Bydgoszcz – John Paul II Primary School in Maksymilianowo
11.	Project participants	Headmasters and deputy headmasters as well as teachers of the Supported Schools and the Cooperating Schools who teach at least one subject from 4 subject areas: – Mathematics area (mathematics) – Science area (natural science, biology, chemistry, geography, physics) – ICT area (computer science) – Language area (English, German) The participants were allocated to 4 Segments: – Segment 1: headmasters and deputy headmasters of the Teacher Training Schools – Segment 2: teachers of the Teacher Training School – Segment 3: headmasters and deputy headmasters of the Supported School – Segment 4: teachers of the Supported School Headmasters and deputy headmasters (Segment 1) as well as teachers (Segment 2) from the Teacher Training School benefited from the support forms offered in task 2 and co-participated in the support forms from task 3, whereas the headmasters and deputy headmasters (Segment 3) as well as teachers (Segment 4) of the Supported Schools took part in the support forms planned in task 3.

Cont. table 1.

12.	Task 1. Providing additional teaching equipment and teaching aids to subject classrooms for the purpose of the Teacher Training School	The task covered providing the classrooms (subject classrooms: nature science, physics, chemistry, language, mathematics and ICT) with additional equipment.
13.	Task 2. Enhancing the staff competencies supporting the forms and methods of the operation of the Teacher Training School approved to be executed	As part of the task, the coaching support (16h) was provided to the headmasters and deputy headmasters of the Teacher Training Schools: – Personnel management; – Change management; – Team building; – Effective employee incentive. The professional competences of the Teacher Training Schools' teachers were strengthened to prepare them for the role of Teacher Training School coaches. The scope of workshop training covered 7 aspects indispensable for providing demo lessons (56h): – Building innovative syllabi and tutorial/ class scenarios; – Developing own interactive teaching materials and using the materials available online; – Using the methods of scientific experiment and life observation in education; – Applying effective learning strategies according to the students' sensory preferences, including motivating the students to learn; the latest trends; – Students' interpersonal and social skills development training; in practice (one-to-one and group tutorials, projects, games, simulations); – Using the latest ICT, including the use of modern ICT tools (interactive board, 3D printer, smartphone, tablet, computer clouds); – Internet security; cyberspace and cyber opportunities as well as the principles of ergonomics while using the computer hardware. The latest task element was to develop and then to review the teaching materials for teachers, students and internship supervisors in terms of innovative organization and teaching solutions to develop the key competences; as part of that support form, there have been developed 8 sets of publications from 4 support areas (mathematics, nature science, computer science, foreign languages).
14.	Task 3. Performing tasks compliant with the needs diagnosed for the Supported Schools for selected forms and methods of the Teacher Training School operation	The key task covered organizing the support forms for the managerial staff (headmasters and deputy headmasters) and the teachers of 7 Supported Schools. As part of the task, the following actions were completed: – Diagnosis of the needs of 7 Supported Schools covered by the impact of the Teacher Training School established. – Coaching for headmasters and deputy headmasters of the Supported Schools (16h). – Development of 8 sets of teaching materials for the teachers, students and internship supervisors from 4 support areas (mathematics, nature science, computer science, foreign languages). – Production of 16 teaching films with demo lesson recordings for 4 areas (mathematics, nature science, ICT, languages) in a multimedia form. – Developing and running 4 stationary cooperation and self-education networks during face-to-face teacher meetings at school (72h). – Running 4 moderator-assisted online networks of cooperation and self-education while working on the www.doskonaleniewsieci.pl platform – Running methodology workshops (48h) for the teachers of 4 areas. Developing 48 scenarios of demo lessons as part of the 4 subject areas. – Running 96 hours of demo lessons as part of the 4 subject areas. – Organizing a methodology conference for 50 participants; – Evaluation of the project actions taken.

Source: own study based on the application for cofunding of "Model Teacher Training School in Niemcz and in Osielsko".

3. Project evaluation research methodology

The last element planned in the application for cofunding was the project evaluation. The subject of the evaluation research was to verify the project goals accomplishment, to assess the support provided to the project participants and to formulate the recommendations for the continuation of the operation of the Teacher Training School over the lifespan. The research process was designed for the findings to provide the most useful practical information (Tołwińska-Królikowska, 2003; Brzezińska, 2000; Zamorska, Krzychała, 2008).

The research was performed in June 2022 according to 5 evaluation criteria for which the following research questions were asked:

- ACCURACY: Does the project respond to the real needs of the target group? And if so, to what extent?
- EFFICIENCY: Has the project provided the assumed effects in terms of the inputs (financial, time-consumption, HR) made? Are the Teacher Training School Model system management and implementation efficient?
- EFFECTIVENESS: Has the project affected a professional development of headmasters and teachers who apply the right teaching, organizational, educational solutions in terms of the actions supporting a development of the key competences of students, especially foreign language teaching, mathematics, natural science subjects and ICT?
- USEFULLNESS: Has the project generated the assumed benefits for the target group? To what extent are the project products used by the target groups? Have the assumed support forms contributed to the teachers' professional development to make effective actions facilitating a development of the students' key competences and taking care of their personal development?
- LIFESPAN: What is the potential of the Teacher Training School? What direction should the support from the Teacher Training School follow once the project is completed?

The evaluation research covered the interest-holders representing the following institutions:

- Representatives of the managerial staff of the project Beneficiary: the Osielsko Commune.
- Representatives of the managerial staff of the project Partner: Euro Innowacje sp. z o.o.
- Headmasters and deputy headmasters as well as teachers of the Teacher Training School participating in the project.
- Headmasters and deputy headmasters as well as teachers of the Supported Schools participating in the project.
- a representative of the support institution: the Kujawy and Pomorze Centre for Teacher Education in Bydgoszcz.
- a representative of the higher education provider: PBS University of Science and Technology in Bydgoszcz.

The research methodology and the diagnostic tools used during the evaluation research:

- analysis of the existing data made available by the Beneficiary and the Partner: the assumptions of the application for funding, payment applications, data from the SL monitoring system, evaluation surveys from trainings, methodology workshops and conferences as well as the documents regulating the project execution (Regulations of competition no POWR.02.10.00-IP.02-00-003/19, Teacher Training Project Model, the Principles of Teacher Training School cooperation);
- CAWI [Computer Assisted Web Interview] quantitative research, carried out for a sample of 76 project participants, including: headmasters, deputy headmasters and teachers of the Teacher Training School (21 persons) and headmasters, deputy headmasters as well as teachers of 7 Supported Schools (55 persons), using the diagnostic tool: survey questionnaires, made available in an electronic form with the use of the Microsoft Forms tool;
- CATI [Computer Assisted Telephone Interview] qualitative research, carried out for a sample of 24 respondents, including: the representative of the Beneficiary and the Partner, headmasters and deputy headmasters of the Teacher Training School as well as Supported Schools, representatives of the higher education provider and support institutions, using the diagnostic tool: an interview questionnaire shared online using the telephone channel.

4. Selected findings of the evaluation of the Supported Schools' teachers

Figures 1-5 demonstrate the selected quantitative CAWI research findings based on the anonymous survey which covered the headmasters and deputy headmasters as well as teachers teaching in 7 Supported Schools who participated in the project.

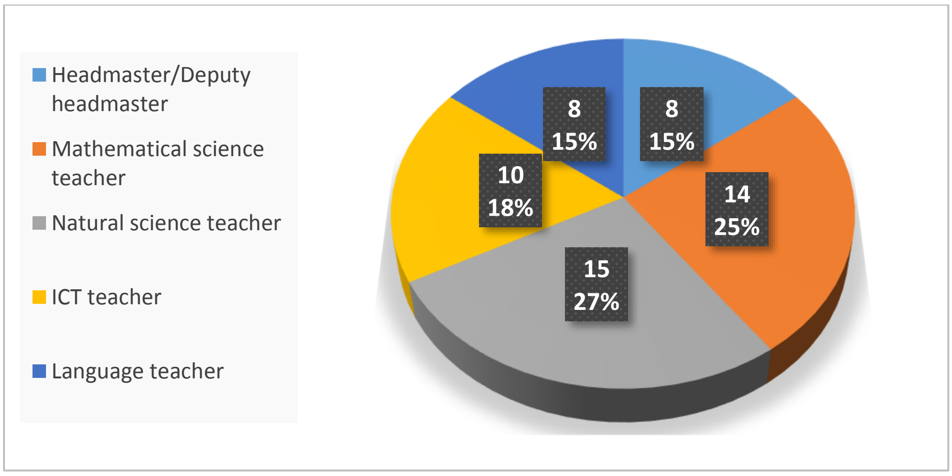

Figure 1. Target group of the teachers and the managerial staff.

Source: own study based on the research performed.

The survey study involved 55 people, which accounts for 89% of the project participants who were evaluating the applicability of the support forms in terms of enhancing the teacher professional competence and the teaching materials and aids developed in their professional work. At the same time the respondents were evaluating the support forms and teaching materials and aids in terms of continuing the operation of the training school. Of the respondents: 8 people were the managerial staff, and the others included 47 teachers representing four subject areas: mathematics (14 people), ICT (10 people), nature science teachers (15 people) and language teachers (8 people). Most of the respondents, as much as 84% (46 people), were women, whereas men accounted for only 16% (9 persons) of the respondents, which corresponds to the dominance of women in the teaching profession.

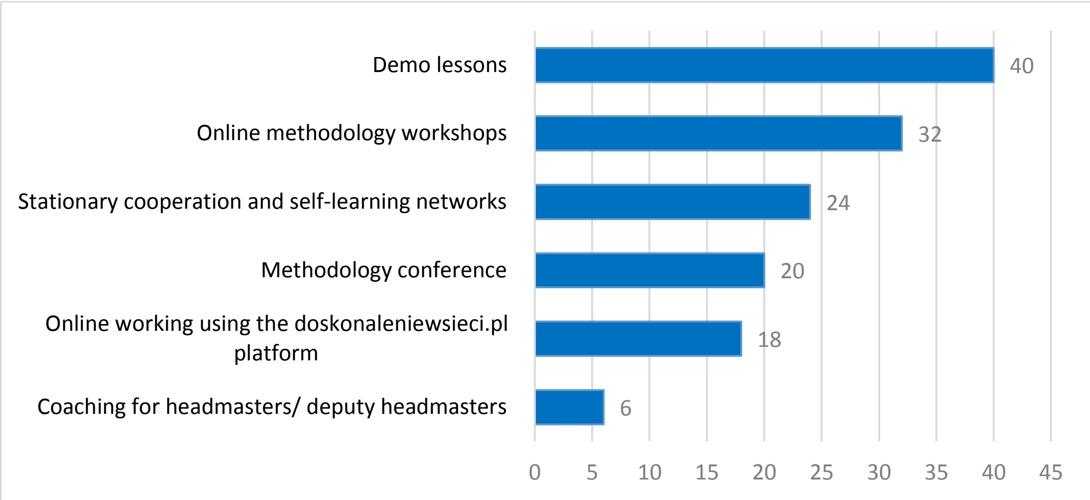

Figure 2. Support forms the respondents participated in.

Source: own study based on the research performed.

Each of the respondents took part in at least one support form, while the choice of the support form was free. The support forms most often selected by the teachers were: *demo lessons* (40 selections) and *online methodology workshops* (32 selections). Less popularity was enjoyed by *stationary cooperation and self-study networks* (24 selections), *a methodology conference* (20 selections) and *working online on the doskonaleniewsieci.pl* platform (18 selections).

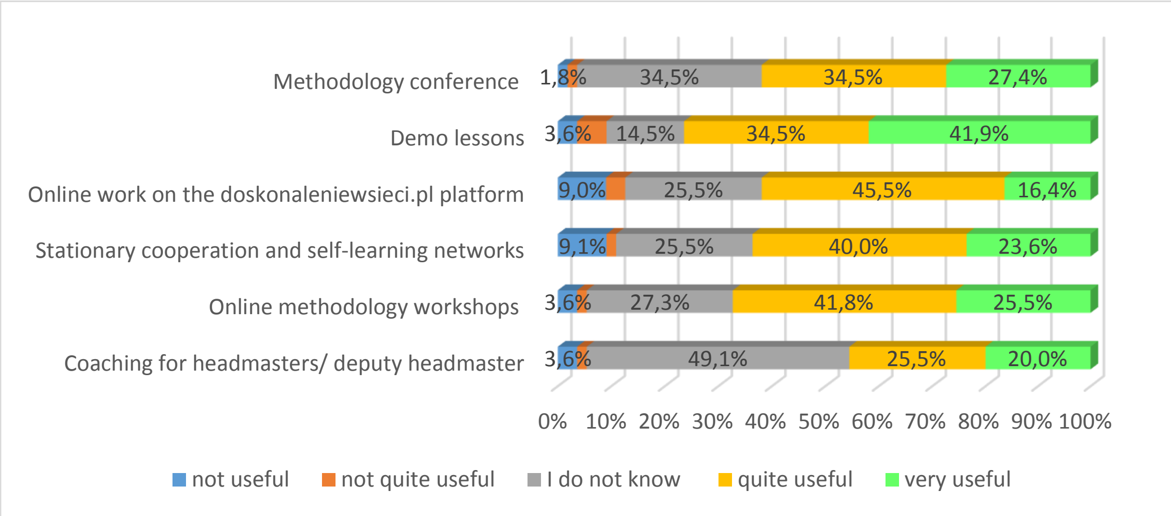

Figure 3. Evaluation of the usefulness of the support forms in terms of teacher competences enhancement.

Source: own study based on the research performed.

The support forms offered in the project were evaluated as useful in terms of teacher's professional competence enhancement. The highest score (as quite useful and very useful) was awarded by the teachers-respondents to the support forms, in the following order: *demo lessons* (77%), *online methodology workshops* (67%), *stationary cooperation and development networks* (64%), *working online on the doskonaleniewsieci.pl* platform and *methodology conference* (62% each).

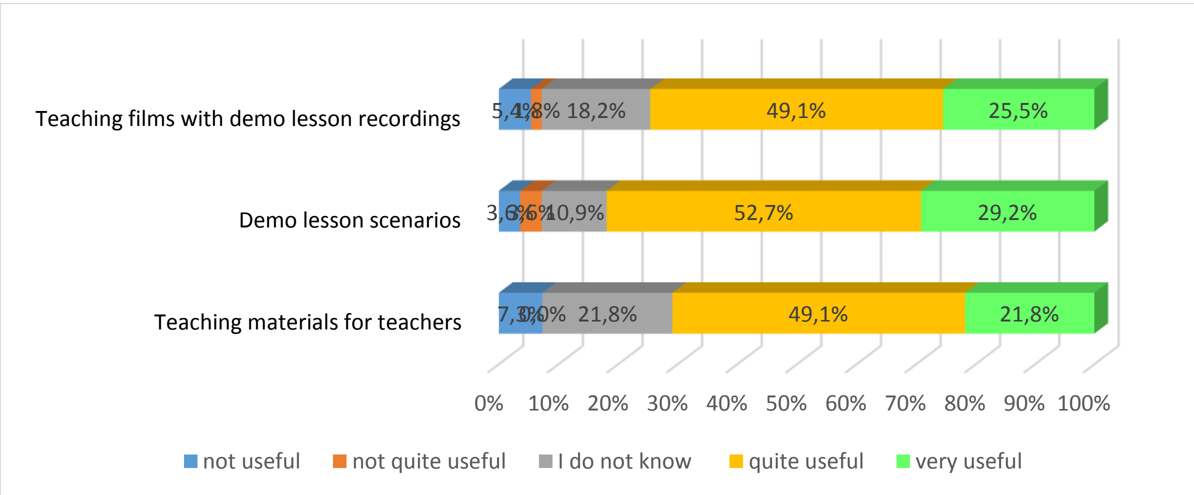

Figure 4. Evaluation of the usefulness of the teaching materials and teaching aids developed in the teacher's professional work.

Source: own study based on the research performed.

In the opinion of the respondents, the teaching materials and the teaching aids developed in the project are useful in the teacher's professional work. As most useful (*quite useful* and *very useful*) the following were indicated in that order: *demo lesion scenarios* (81%), *teaching films with demo lessons recordings* (75%) and *teaching materials for teachers* (71%).

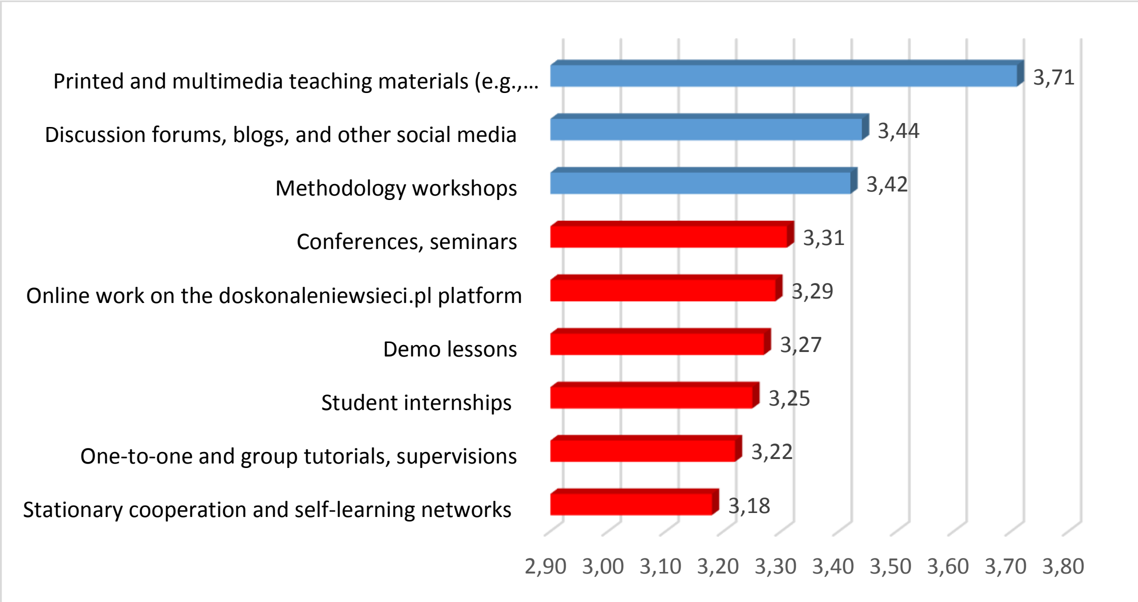

Figure 5. Evaluation of the support forms as well as teaching materials and aids in terms of continuing the teacher training school operation.

Source: own study based on the research performed.

The respondents evaluated the respective support forms and indicated which, in their opinion, should be continued during the lifespan, namely for 5 years after the project completion. Each of the support forms was evaluated using the scale from 1 to 5, where 1 – *should definitely not be continued*, and 5 – *should definitely be continued*. The arithmetic mean calculated was 3.44. The following support forms were found above the average: *printed and multimedia teaching materials* (average score: 3.71), *discussion forums*, *blogs, other social media* (average score: 3,44), *methodology workshops* (average score: 3.42). a slightly lower score (below the average) was allocated to: *conferences and seminars* (average score: 3.31), *working online on the doskonaleniewsieci.pl platform* (average score: 3.29), *demo lessons* (average score: 3.27), *student internship* (average score: 3.25), *one-to-one and group tutorials, supervisions* (average score: 3.22) and *stationary cooperation and self-study networks* (average score: 3.18).

Selected findings of the qualitative research (CAWI) carried out in a form of interview with a representative of the Beneficiary and the Partner (2 people), headmasters and deputy headmasters of the Training School (4 people) and the representatives of the higher education provider and the support institution (2 people) are presented in Table 2.

Table 2.
Opinions of the respondents on the operation of the Model Training School as part of the project

Respondents	Questions and answers (selected)
Project executors (Beneficiary and Partner)	**1. Did, in your opinion, the project execution affect a professional development of the headmasters and teachers in terms of their application of interesting solutions supporting a development of the key student competences?**
	In my opinion that the project execution enhanced a professional development of the teaching staff thanks to a practical character of the support and teachers sharing their experiences.
	I think that the project execution enhanced a professional development of the teaching staff as the project participants were taking part in trainings and methodology workshops which increased their competences and, thanks to them, they acquired new skills which can be used in their everyday work with the students.
	2. Was, in your opinion, the Training School Model management and implementation system as part of the project effective?
	The Training School Model management and implementation system in the project was effective.
	The Training School Model management and implementation system in the project was effective as the tasks executed facilitated accomplishing the aims assumed in the project; subject classrooms have been provided with additional equipment in schools, teaching staff competences have been increased.
	3. What actions, in your opinion, are most effective and should be continued by the Training School?
	The effective actions which should be continued by the Training School include demo lessons, methodology workshops, one-to-one and group tutorials, supervisions, conferences, seminars.
	The effective actions which should be continued by the Training School are demo lessons and one-to-one and group tutorials.
	4. What actions, in your opinion, should be launched for the Training School to operate effectively throughout the project life?
	The actions which should be launched for the Training School to operate effectively throughout the project life are, especially, providing funds for the planned actions throughout the project life.
	The actions which should be launched to ensure an effective operation of the Training School throughout the project life: the leading authority (commune) providing the funds for actions throughout the project life, e.g., conferences and workshops as well as planning the support schedule by supporting institutions experts (KPCEN in Bydgoszcz) executed as part of the statutory operation of the supporting institution and continued support by the PBS University of Science and Technology in Bydgoszcz as part of 3 missions of the University and including the teachers of the Training School into educational actions for children.
Headmasters and deputy headmasters of the Training School and the Supported Schools	**1. To what extent has the participation in the project contributed to increasing the professional competences of the teachers employed in the school?**
	On average
	Very much
	I cannot say.
	I think that very much.
	2. What, in your opinion, teaching materials will be most useful in the teachers' professional career?
	Class scenarios and teaching films, I think.
	Class scenarios and films with recordings, I think.
	All the materials: scenarios, publications and films.
	Publications and films, I think
	3. What actions should, in your opinion, teachers continue to participate in throughout the project life?
	I am of the opinion that the most valuable were the demo lessons, conferences and seminars.
	In my opinion the following should be continued: cooperation and self-study networks as well as face-to-face and group tutorials, supervisions.
	The teachers should take part in tutorials, supervisions, conferences and seminars. At the same time, discussion forums, blogs and other social media are valuable for them
	I think that the following should be continued, especially, cooperation networks and demo lessons.

	4. What actions, in your opinion, should be taken for the Training School to operate effectively once the project is completed?
	In my opinion, one should facilitate benefiting from selected support forms on the premises of the Supported Schools, take care of the practical character of the workshops, networks, conferences, seminars, engage all the teachers in joint actions, make teachers aware that the process of sharing knowledge is bilateral and it leads to benefits to both sides, make sure the leading authority provides financial assistance for launching innovations (e.g., a possibility of organizing extra activities, research visits for teachers, teaching aid and subject classroom equipment purchases).
	In my opinion, one must make sure the workshops, networks, conferences, seminars are practical in character, find financial support for financing the actions.
	In my opinion one must care for the teacher needs and adjust the support to the expectations, a practical dimension of the support, engage the teaching staff in joint actions and motivate the teachers to share the exercise materials, lesson plans, tasks, games, tests.
	It is most important to investigate the teacher needs, to provide a practical dimension of the support offered, motivating teacher to self-study, cooperation and sharing experience with each other and providing parent training and sharing the knowledge acquired with the entire teacher council for the change to occur at the same time in the entire school.
Representatives of the higher education provider and the supporting institution	**1. What actions, in your opinion, must be taken for the Training School to operate effectively once the project is completed?**
	Definitely maintain the contacts and cooperation established.
	Maintain the contacts established and provide high-class teacher training coaches.
	2. Is, in your opinion, the teacher support system offered by the Training School Model effective?
	Pretty sure
	Yes, definitely
	3. Based on your experience, what should be changed in the Model?
	Hard to say
	More engagement of all the teachers.
	4. how the institution you represent could support the Training School throughout the project life?
	My institution (higher education provider) could plan classes for the students in a form of science tutorials (chemistry, physics, biology), hold a conference for the headmasters and teachers, provide the teachers with an offer of lectures for various groups (children, students, senior citizens), the higher education provider could hand over equipment to schools.
	The institution I represent (Supporting Institution) could support the Training School by providing tutorials, demo lesson observations, operating the networks, material development and sharing, lesson scenario development, school needs diagnosis, providing training and workshops for teachers.

Source: own study based on own research.

The project evaluation findings facilitated granting a positive score evaluation of the Training School actions in terms of all the evaluation criteria as the project responded to the real needs of the target group, the Training School Model management and implementation system, as part of the project, was evaluated as effective. Besides, the project execution enhanced the professional development of headmasters and teachers who apply interesting teaching, organizational, upbringing solutions in terms of the actions supporting a development of the key student competences. At the same time the project has generated the assumed benefits for the target group and it is possible for the Training School to operate throughout the project life; for 5 years, once the project is completed.

5. Conclusions

The priority of the educational policy in Poland should be to ensure an effective teacher education and life-long professional development system which will respond to the real-life needs of the school and which will allow the teachers to enhance their professional competences and develop their working tools. The Teacher Training Model presented as an innovative teacher competence support system can be applied in other primary schools in Poland.

The evaluation findings awarded a positive score to the project in terms of the research questions according to 5 evaluation criteria. At the same time the expectations of the teaching staff in terms of the directions for continuing the teacher support by the teacher training school during the project lifespan were looked at.

According to the opinion of the managerial staff of both the supported schools and the teacher training schools, while providing the support, one should verify the current needs of the teachers and adjust the support forms to their expectations. Similarly, it is of crucial importance to make the teachers aware that the process of sharing knowledge is bidirectional and beneficial for both parties involved and so it is important to motivate the teachers to cooperate and share experience with one another. It would be most precious if the teachers were open to sharing their knowledge; materials, scenarios, lesson plans, tasks, games, tests and if they could post the teaching aids they have developed, free of charge, on the special portal. Teachers are interested in using ready teaching aids, class scenarios and teaching films which they could directly implement into their class. At the same time the teaching staff is open to cooperation and sharing experience with other teachers on discussion forums, blogs, social media and during methodology workshops. In terms of competence enhancement, a practical dimension of workshops, networks, conferences and seminars is of special importance and so the qualified staff should be selected to perform actions (motivated, competent and communicative). The way the training sessions should be organized should allow benefiting from the support forms selected on the supported school premises. It is also essential to adjust the times and days to the teacher group preferences. The teaching process should involve all the teachers and parents so that the change occurs simultaneously in the entire school and it is global. In the opinion of the project executors, namely the Beneficiary and the Partner, for the Teacher Training School to operate effectively during the project lifespan, it is required to provide the funds, to develop the action schedule for the successive years and to determine the framework cooperation with the supporting institution and with the higher education provider.

Importantly, despite the positive score awarded to the operation of the Model Training School, the success of implementing those changes will be feasible when the prestige of the teaching profession increases. It is disturbing that many teachers give up their jobs. It is also observed that few young people are interested taking up a teaching career. The principles of recruitment and effective teacher remuneration are also essential so that those are the people who consider it a vocation and who are open to development and competence enhancement process. And those aspects provide a huge challenge for the state's education policy, which is not the subject matter of this article.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

RECYCLING OF PRODUCTION WASTE OF THE TEXTILE AND CLOTHING INDUSTRY IN CIRCULAR ECONOMY CONTEXT

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Purpose: The main aim of the research presented in the article was to identify and categorize the main production waste generated in the textile and clothing industry and their impact on the environment in the context of sustainable development, along with presenting recycling as a solution to the problem of production waste. Nowadays, through newly emerging EU directives, growing population, and consumer lifestyles, and, consequently, the huge amount of waste generated, the waste problem will increase, and it will be increasingly important to look for new solutions to this problem.

Design/methodology/approach: The research presented in the article used an analysis of the literature on the textile industry and its impact on the environment, along with an analysis of the generated textile waste in the concept of sustainable development.

Findings: Textile and clothing industry is an important factor influencing the sustainable development of the economy both in the world and in Poland. In the light of the newly established EU directives, this will be a very important issue in the future, which will require urgent attention to this topic and finding optimal solutions in the context of sustainable development or the circular economy. Based on the report results, there has already been a significant change in the behavior and ecological awareness of Poles over recent years.

Research limitations/implication: Future research will continue material recovery during physical and chemical recycling.

Practical implications: The article presents a review of research on the diversity of waste from the textile and clothing industry in Poland, which shows the importance and scale of the problem and allows for further research on the management of the generated waste. The author also collected data from a nationwide report on Polish people approach to clothing recycling, which she presented in the article, but they require a broader and more detailed analysis.

Originality/value: Based on the analysis of available literature, the article shows the scale of the problem, which is an urgent problem and an important future issue thanks to the new EU directives on sustainable development and the circular economy. Additionally, data was collected regarding a report on Poles' approach to recycling, which highlights the consumer trend in environmental protection.

Keywords: textile waste, textile recycling, sustainable development, circular economy.

Category of the paper: research article.

1. Introduction

Recently, there has been a rapid development of industry, technology, and science, and at the same time an even faster increase in the population. Therefore, the impact of man and his economy on the environment has become very visible, especially from the perspective of the waste he produces. Human activities should be as consistent with nature as possible, should not have any impact on it, and certainly should not irreversibly disturb its operation. However, the amount of waste generated by humans in the 21st century is the opposite of the harmony of life with nature. Year by year, people around the world produce more and more waste, which has made it the most burning problem today. Fortunately, society's awareness of caring for and protecting the environment is increasing. The increase in the number of people around the world has contributed to an increase in the demand for various types of goods, and the exhaustion of natural resources makes people think about ecology and the management of such large amounts of waste (Brdulak, 2012; Dorobek, Bursztyński, 2014).

Rational resource management promotes, among others: solving many environmental problems (decrease in the number and availability of renewable sources, environmental pollution, formation of greenhouse gases that reduce the ozone layer, and thus, to global warming) and constitutes one of the most important challenges for Europe.

In the last dozen years, there has been a move away from a linear economy based on the "produce, consume, throw away" model and towards a circular economy "sustainable production, sustainable consumption, upcycling", in which waste can become the basis for the recovery of raw materials; primary, including minerals. Rational use from available raw materials can be a source of significant savings and at the same time contribute to the reduction of waste, the use of secondary raw materials as primary ones and to meet people’s demand at least partially for new products (Szołtysek, 2009).

Recycling is a concept that fits into the idea of environmental protection, reducing the amount of waste generated and the circular economy concept. There are many forms of recycling, including plastic, glass, paper, and metal recycling. Each of these forms has its own unique challenges and requires different processing processes, but they all contribute to saving natural resources, reducing waste and reducing greenhouse gas emissions. With the advancement of technology and the growing demand for sustainable products, recycling has also become an important factor in the fashion industry. Clothing recycling allows to use used fabrics and clothes, as well as reduce the negative impact of the fashion industry on the natural environment. This article discusses various aspects of recycling, particularly clothing recycling from the textile industry, including processing processes and also environmental and social benefits.

2. Conceptual background

Textile industry

The textile industry is one of the largest and fastest-developing industries. The rapid development of the clothing and textile industry and the rapid fashion trend among consumers have resulted in a sharp global increase in the amount of textile waste produced. In 1950, FAO reported that 3.7 kg of textile fibers per person was producted, while in 2007 this number increased to 11.1 kg and is constantly growing (Shui, 2011; Bartl, 2011). This huge demand leads to the production of large numbers of textile fibers. In 2007, 70.6 million tons of textile fibers were produced, and in 2014, 90.8 million tons. Therefore, it is expected that the average annual growth rate of the global textile and clothing market will be 3.7% and will exceed 100 million tons in 2025 (Statista, 2016; Tot, 2004; Lenzing, 2016). Such a large expansion of the textile industry has a significant impact on the world economy. In 2002, the world trade in industrial textiles reached $400 billion, representing 6% of world trade (Vaidya, 2006). However, in 2012, this trade increased to $1.8 trillion (Comtrade, 2012). The two largest textile producers in the world are China and India. The Chinese textile industry in 2012 accounted for 54% of total world production. However, the largest importer of textile products was the United States; in 2012, the value of textile imports was $151 billion (Contrade, 2012; Huang, 2012). But over the years, the situation has changed and in 2017, China and the EU were the two leading regions for clothing and textile exports (Tabaraki, 2007). World production of textile fibers amounted to 98.5 million metric tons (MMT) in 2017, and in 2019 it increased to 111 MMT (Walętrzak, 2016).

Recycling

Recycling is a waste processing process that aims to reuse it, to reduce the amount of waste stored in landfills and reduce the negative impact on the environment. Nowadays, recycling has become a very important topic due to the growing amount of waste and the need to protect the natural environment (Interreg, 2020). Recycling is not limited only to the use of secondary raw materials but is also a system of full organization of the circulation of materials that can be recycled many times. For the properly system function, it should include elements such as:

- appropriate legislative policy of the country,
- appropriate design of goods (ecodesign),
- development of technologies and techniques related to the processing of materials,
- appropriate labeling system for products, product packaging and their components for easier recognition and segregation,
- spreading pro-ecological education,
- logistics of collecting, sorting, and collecting used goods,
- waste processing and raw material recovery.

There are three types of recycling:

- reuse – using a material or product for the same purpose, e.g., returnable bottles,

- further use – use of waste for new purposes after physical, chemical, or biological processing, e.g., granulate for PET bottles,
- reuse – recovering chemical waste from garbage and reintroducing it into production, e.g., using car wrecks in a steelwork.

Due to the specificity of the technology used, material (mechanical) recycling can be distinguished, including the reuse of waste as a product; raw material (chemical) recycling, allowing the processing of mixed materials; energy recycling (thermal) - combustion with energy recovery and organic (biological) recycling - aerobic or anaerobic treatment.

The benefits of recycling are (Dorobek, Bursztyński, 2014):

- reducing the amount of waste produced by limiting the products purchased, composting waste, giving up packaging,
- giving objects a new life and purpose,
- reducing the amount of stored rainfall,
- energy efficiency,
- creation of new jobs,
- reducing the use of natural resources,
- reducing harmful emissions into the atmosphere and enabling sustainable development.

With the advancement of technology and the growing demand for sustainable products, recycling has also become an important factor in the fashion industry. Clothing recycling allows to reuse used fabrics and clothes, as well as reduce the negative impact of the fashion industry on the natural environment.

Textile recycling

Nowadays, textile recycling has become a global challenge because the economy needs a continuous supply of raw material - textiles, especially in the current time of consumerism and fast fashion. On the other hand, in the perspective of growing fashion and the need to move towards sustainable development and a circular economy, there was a need to reduce natural resources. In addition, issues related to waste management, especially recycling, are becoming more and more important due to the shortage of natural raw materials and their unsustainable use. Another problem is the storage of waste, due to the limited amount of space and the relatively high costs of its storage (Chiu, 2021).

For the above reasons, it is necessary to use material recycling not only at the stage of textile production, but also after their production - especially if the consumer intends to get rid of them.

Figure 1 shows three types of material recycling - mechanical, physical, and chemical recycling.

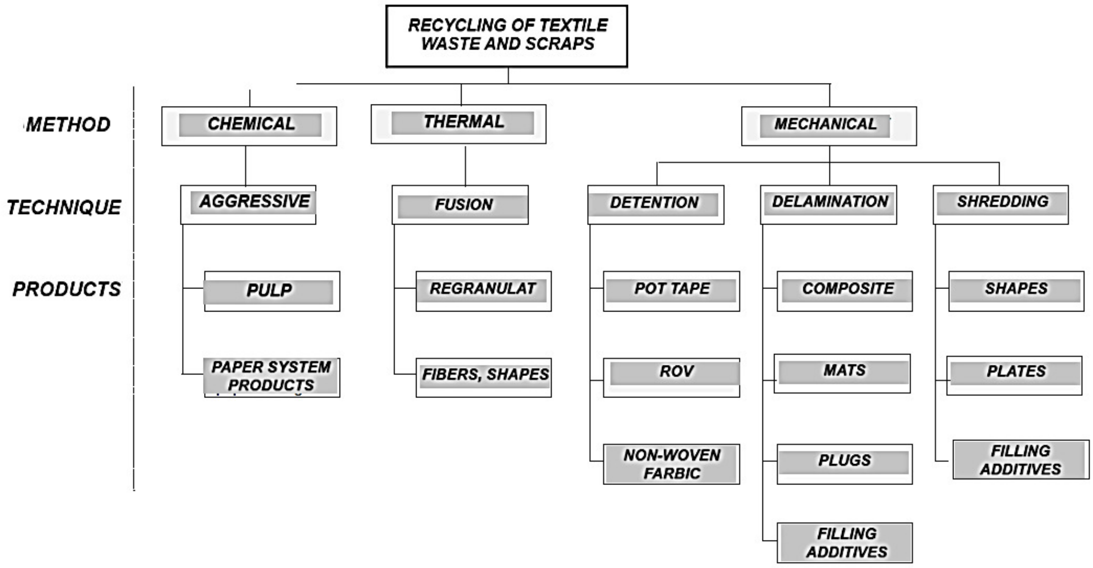

Figure 1. Recycling methods and obtained products.

Source: (Moraczewski, 2007).

Mechanical recycling is the most used method of shredding textile waste by cutting and tearing, and finally carding (combing) to loosen the fibers of the materials. The next stage is forming the tape and spinning or forming and consolidating the fleece. During the spinning process, yarns are obtained, while the resulting fleece is mainly used to produce nonwoven fabrics. After recycling, the obtained fibers have deteriorated physical parameters - they are shorter and contain only 2-5% of monofilaments. The fleece is consolidated using various methods, most often by needling, stitching or thermal bonding, i.e., welding. The material produced in this way can be used for cloths and cleaning materials, filling materials, thermal and sound insulation materials, geotextiles and upholstery and automotive textile elements. The most profitable and economically justified concept is the processing of textile waste into disordered fleece (Interreg, 2020).

Physical recycling can be used for thermoplastic materials - textile waste is granulated and can be reused as a raw material. The main criterion for physical recycling is primarily the purity of the final product, therefore waste should be sorted before recycling. Sorting is most often done by machine or manually, depending on the color and chemical structure of the sorted plastics - automatic sorting is most often used. After the sorting process, textile waste is shredded, melted, and processed into granules. Textile polymers such as polyolefins and polyester are recovered in a physical process. Unfortunately, in this process, subsequent temperature processing changes the material properties and makes it difficult to use the materials for the same application. In the process of physical recycling, the quality of the material is lost (worse mechanical properties, change in thermal properties, deterioration of resistance to light exposure) or degradation of the material.

Chemical recycling is the production of chemical products from polymer materials - most often waste. In chemical recycling, there are three methods for recovering polymers. The first method involves depolymerization of polymer chains into monomers with a level of purity that allows the material to be re-polymerized. The second method involves the use of chemical solvents, which are selective polymer solvents - hydrolysis, alcoholics or ammonolysis. The last method is pyrolysis - degradation under the influence of high temperature in the absence of oxygen. The following polymers can be recovered through chemical recycling: cellulose, polyester, polyamide, polyurethane. The advantage of this method is that it can be used to recover various types of polymers from textile waste made from a mixture of polymers or unmixed synthetic textile waste (Interreg, 2020; Moraczewski, 2007).

3. Textile recycling in sustaindevelopment context

“Sustainable development is development in which the needs of the present can be met without compromising the opportunities of future generations to meet their needs” (Report of the World Commission, 1987). One of the main challenges facing the textile and clothing industry is more effective management of natural (non-renewable) resources and increasing the innovation of waste recycling. The changes cover 3 areas of life:

- economic (prosperity) – reducing the costs of raw materials and energy consumption and waste disposal, creating new business networks, which provides a new market of opportunities,
- environmental (planet) - optimization of the use of natural resources, reduction of environmental impact and reduction of gas emissions, avoidance, storage, recovery of energy from waste,
- social (people) – increasing the standard of living, more green jobs (increase in employment).

The eco-design trend fits into the concept of sustainable development. It is an approach to design that considers its impact on the environment throughout the product's life cycle. It concerns design that minimizes the harmful impact of the production and use of products on the environment. The concept of eco-fashion is directly related to the concept of eco-design. Eco-fashion products are characterized by (Muthu, Gardetti, 2016):

- use of organic raw materials grown without pesticides,
- use of textiles without the use of chemicals and bleaches,
- reusing recycled materials or fibers,
- durability and quality so that consumers can keep them for longer,
- considering fair trade principles.

Consumers can also influence the quantity and quality of clothing produced and textile products through (Szewczyk, 2017):

- education and promotion of consumers' minimalist approach to purchased clothing - consumers will buy fewer clothes, their purchases will be more thoughtful, and the clothes they choose will be more universal and functional. This is what is called slow fashion. All these treatments should reduce the amount of clothing produced and, consequently, the amount of waste generated,
- reusing used clothing - it involves extending the life of a given product by repairing, repairing, sewing, or modifying it (shortening, narrowing). There are also companies offering the opportunity to sell and buy your things (e.g., Vinted) and second-hand clothing stores. You can also donate used clothes to the poor (Wtórpol containers, PCK).
- recycling – processing used clothing, fabric scraps, offcuts, and other waste into new fibers of comparable value.

In Poland, as in the entire European Union, various types of clothes and fabrics, but also blankets and other textiles are collected in specialized containers. The textiles that end up there are in various states of wear and tear (wear and cleanliness), so it is very important to segregate them and choose the appropriate method of processing them. There are many companies in Poland that recycle clothes, including: Tesso, PCK, H&M, Reserved, Vive Textile Recycling, Caritas, Wtórpol. In 2021, Wtórpol Company conducted a research report among Poles on clothing recycling and purchasing habits and getting rid of clothes. The study involved 1025 Poles, over 18 years of age, according to the distribution of gender, age, and town size class. According to the report, to the question "Do you think recycling clothes helps protect the environment" only 27.4% of people answered, "Definitely yes", 50.9% "Rather yes", 17.2% answered "I don't know/it's hard to say", and 3.5% answered "Probably not". These results clearly show that some Poles are aware of the fact, that recycling clothes will contribute to environmental protection. 78% of Poles see such a possibility, which is probably the result of numerous campaigns promoting recycling and consumer education in the field of ecology. On the other hand, when asked “Do you know a company or organization that recycles clothes?” only 15.8% of Poles answered affirmatively. This is a very low percentage, which proves that Poles are not interested in what happens to their recycled clothing. Interestingly, when asked about the reasons for environmental pollution, most people selected industrial sewage (29.4%), and only 6.7% selected clothing production. After all, clothing production and the textile industry are the second source of environmental pollution, after the oil industry (Report, 2021).

To summarize the report's results, most Poles (61%) recycle unnecessary clothes. The vast majority of respondents (78%) believe that recycling clothes contributes to environmental protection. Poles' attitude towards buying clothes has also changed, especially after the pandemic. Every third Pole (32%) declares that they buy clothes more consciously, almost the same percentage of respondents (30%) buy new clothes less often. Most changes in behavior can be observed among women than among men, which may indicate greater ecological awareness among women and the impact of our daily choices on the environment. The majority of respondents (71%) bought second-hand clothes at least once, and 60% of people from this group indicated second-hand stationary stores as the place of purchase.

4. Summary and conclusion

The world economy has been struggling for many years with problems such as depleting natural resources, environmental pollution, and excessive waste production. The need to introduce changes in the protection of the natural environment is strongly emphasized by the concept of sustainable development. Environmental problems affect many areas of economic life, especially production sectors, e.g., the clothing industry. The clothing industry, after the oil industry, is the second largest consumer of water in the world and a source of pollution. A significant source of environmental degradation are pesticides used in the cultivation of natural fibers. In the next stage of clothes production, a large amount of contamination is created (dye baths containing chemicals and dyes, a large amount of fabric scraps). The next stage of pollution formation is the transport of clothes and their disposal. The clothing industry is inextricably linked with consumerism and fast fashion, which leads to the creation of a huge amount of unused clothes, which are waste. Changing people's awareness and introducing the principles of sustainable development and circular economy can contribute to reducing the amount of waste generated and thus contribute to the protection of the natural environment. Clothing recycling is a very promising solution. Clothing collected from containers, if it is in good condition, goes to poor countries in Africa or Asia. Some of the clothing that is not suitable for shipping is recycled. Carpets are made from wool, cleaning cloths are made from cotton, and other materials are processed into alternative fuel that replaces coal. A large part of clothes is processed into thermal insulation, filler for car seats and animal beds. Through chemical recycling, some fibers can also be recovered for reuse.

Based on the results obtained from the report, there has already been a significant change in the behavior and ecological awareness of Poles over recent years. Ecological, zero waste, eco-design and recycling topics are becoming more and more popular in the media and public discussions, which has a positive impact on the ecological education of society. Of course, there is still a lot to do, as the level of recycling is still quite low in Poland, but looking at the results of the report, the thinking of Polish society is heading in the right direction. Taking care of the environment and the planet is the task of all of us, and it starts with our everyday choices and habits. Starting from buying clothes, through its treatment during use (darning, repairing, patching, sewing) and ending with its disposal, i.e., recycling it or extending its life - selling it, e.g., on Vinted, or giving it to younger siblings.

To sum up, there is still a lot to do when it comes to ecology and recycling, but society is on a much better path than a few years ago. Through various types of educational programs, people's willingness, and attitude towards the subject of care changes about the natural environment.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

STOCK MANAGEMENT IN E-COMMERCE BY 3PL – CASE STUDY

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Purpose: The purpose of this study is to delve into the effectiveness of third-party logistics (3PL) providers in inventory management for retail businesses operating in the e-commerce sector.
Design/methodology/approach: The study focuses on analyzing a conducted case study. The case study aims to compare the currently functioning inventory management system with the system proposed by the 3PL provider for managing the location of SKUs in the warehouse.
Findings: The research has allowed for a positive verification of the posed hypothesis (i.e., a 3PL company is capable of better inventory management for an e-commerce service recipient). The 3PL provider has the potential to implement an improved inventory management system based on location management and automated storage processes built upon the logistic service provider's know-how.
Research limitations/implications: The primary limitation of the research lies in presenting results based solely on a single case study and the instance of a logistics operator with significant experience and an established market position.
Originality/value: This article constitutes a significant contribution to the expanding spectrum of research concerning the role of third-party logistics (3PL) providers in enhancing inventory management processes, particularly in the context of e-commerce. The added value lies not only in confirming the positive affirmation of the research hypothesis but also in highlighting the immense potential that 3PL providers possess in implementing advanced inventory management systems based on location management strategies and warehouse process automation.
Keywords: 3PL, e-commerce, stock management, warehousing.
Category of the paper: Research paper.

1. Introduction

In recent years, the rapid growth of the e-commerce industry has presented significant challenges for retail enterprises in effectively managing their inventory (Pourhejazy, 2020; Pillai, 2022; Jain, Tan, 2022). This challenge arises from the dynamic nature of consumer expectations and the need for efficient order fulfillment. As consumer preferences and requirements continue to evolve, businesses must ensure that their inventory management processes can adapt to these changes. In this context, third-party logistics (3PL) providers have emerged as strategic allies (Lyu, 2020; Lin, 2022; Sarjono et al., 2021), playing a crucial role in addressing these challenges and optimizing inventory management operations.

The purpose of this study is to delve into the effectiveness of 3PL providers in the realm of inventory management for retail enterprises operating in the e-commerce sector. To achieve this goal, the study is based on a case study, which serves as the foundation for the conducted research. The research hypothesis posited in this study suggests that 3PL companies possess an inherent ability to enhance inventory management practices for e-commerce service recipients. Confirming this hypothesis will not only shed light on the untapped potential of 3PL providers but will also underscore their significant contribution to the implementation of advanced inventory management systems. These systems are built upon strategic location management methodologies and the integration of warehouse automation technologies. These strategies leverage the extensive logistical expertise held by 3PL providers, positioning them as key players in the evolution of inventory management practices. Emphasizing the dynamic role of 3PL providers in boosting inventory management efficiency for e-commerce enterprises, this study reinforces the importance of their involvement in the industry. The symbiotic relationship between 3PL providers and e-commerce businesses is highlighted, demonstrating how these partnerships collectively navigate the complexities of modern inventory management and actively shape this field. As the e-commerce sector continues to experience unprecedented growth, enterprises face mounting pressure to optimize their inventory management practices. The role of 3PL providers in this context becomes increasingly significant, as they offer the knowledge and resources needed to implement advanced inventory management systems based on location-related strategies and automated warehousing. This study underscores the importance of understanding the capabilities and contributions of 3PL providers within the intricate network of e-commerce operations.

2. Theoretical background

2.1. 3PL in the e-commerce and multichannel activity

Companies operating in the e-commerce or multichannel commerce sector are seeking partnerships with third-party logistics (3PL) firms. These logistics companies add value by providing various complementary services and sharing both physical resources and information to optimize flows across the entire supply chain (Rabinovich, Knemeyer, 2006). Retailers can, for example, shorten lead times for orders mainly through order fulfillment services provided by 3PL (Wollenburg et al., 2018). Logistics issues in the e-commerce, multichannel, and omnichannel domains typically focus on supply chain coordination, warehouse operations, and strategies for warehouse management, e-fulfillment, and customer logistics support (Mishra et al., 2021). Logistics is a critical aspect related to the success of e-commerce operations (Banerjee, 2019) as well as other distribution forms like multi-, cross-, and omnichannels. The dynamic growth of third-party logistics (3PL) services has been accelerated by the expansion of e-commerce and increased logistical operations associated with returns handling. As a result, a significant influx of external logistics firms has been observed, aiming to support the maintenance of this complex supply chain structure and offering a wide array of diverse services (Wang et al., 2021a). 3PL also contributes to environmental impact reduction by increasing the utilization of eco-friendly transportation methods, enhancing delivery efficiency, and boosting delivery flexibility (Buldeo et al., 2019). With the rise of information technology, 3PL is often considered a crucial element for achieving rapid growth in multi-channel business (Gupta et al., 2021). However, it's important to note that engaging with logistics operators is associated with long-term financial decisions (Chiu et al., 2011). For companies operating as third-party logistics service providers (3PL), having tangible resources like warehouses or transport fleets is a crucial aspect, enabling them to conduct flexible operations. The number of logistics companies actively engaging in the distribution of various food products through multiple channels is increasing. DHL, for instance, was a pioneer in the logistics industry that engaged in distributing food products through various channels (Saskia et al., 2016).

The concept of multichannels and the concept of utilizing 3PL entities for logistics services are often treated as separate issues in the literature (Mikhaylyk et al., 2019). This is observed, among other ways, by developing methods for integrating e-commerce platforms in communication between producers and customers. In such approaches, models in which 3PL service providers are treated as separate entities not participating in the flow of information but only carrying out commissioned logistical activities are evident (Wang et al., 2021b). According to some authors, involving logistics operators increases the complexity of multi-channel systems (Wang et al., 2021b). Nevertheless, the benefits from their utilization are significant enough for their role in distribution systems to continuously expand. In the context of multi-channel systems, it's important to maintain and effectively utilize the set of customer information available in different channels (Jeanpert, Pache, 2016). Customer satisfaction is a result of, among other factors, the level of logistical service offered by logistics operators within the network (Chen et al., 2020). 3PL providers offer not only logistical services but also provide sellers with access to their network of contacts, allowing for the effective fulfillment of customer orders through existing relationships. They may handle product returns and collaborate with carriers for last-mile delivery (Rabinovich, Knemeyer, 2006). Some authors particularly focus on "last-mile" delivery and identify it as a key problematic point in the operation of multi-channel systems. They also note that systems that don't primarily focus on improving the last-mile delivery, even if they involve third-party logistics (3PL) providers, exhibit lower efficiency compared to those that focus on optimizing this delivery stage (Lim, Winkenbach, 2019).

Among the functions of third-party logistics service providers (3PL) in a multi-channel approach, logistics support for drop shipping and assistance to firms in inventory management, such as through the use of Vendor-Managed Inventory (VMI) models, are highlighted (Gupta et al., 2021). An absolutely critical aspect for the effectiveness of online commerce, when considering it from a logistical operations perspective, is an appropriate inventory control system (Rabinovich, Knemeyer, 2006). The biggest challenge for 3PL providers in the era of omnichannel lies in effectively managing the growing number of small parcels, fulfilling more frequent orders, reducing fulfillment times, increased product diversity, and harmonizing distribution processes across different channels (Baglio et al., 2022). Banerjee (2019) notes that logistics service providers should develop their skills and infrastructure towards enhancing their capabilities in automating sorting processes in warehouse management. Concepts like fully automated warehouse centers, zero-carbon emission buildings, hybrid or fully electric trucks, robotics, drones, and warehouse control through voice commands or optical systems are becoming more common among firms in the logistics field (Baglio et al., 2022). Some researchers highlight the potential for integrating technological solutions, including Internet of Things (IoT) technologies, used by manufacturers, with the activities of 3PL (Golinska-Dawson et al., 2023). 3PL should tailor logistical services to specific customer reception methods and demonstrate the ability to integrate their solutions with customer-friendly solutions like QR codes (Buldeo et al., 2019). Among the major challenges for LSPs, it's mentioned that they must satisfy customers with diverse needs across different channels (Chen et al., 2020). Ramanathan et al. (2014) indicate in their research that most LSPs create additional value for customers in omnichannel systems. Frei et al. (2022) point out that selecting and building relationships with 3PL can be considered strategic tasks for an enterprise acting as an omnichannel architect. According to Gupta et al. (2021), companies that transitioned to omnichannel sales models in recent years had the opportunity to increase their profits by 5% to 15%. Moreover, in the realm of innovation development in companies implementing omnichannels, some authors suggest that utilizing logistics service providers (LSPs) is one of the most effective practices (Fleischer et al., 2020). Therefore, while it's a challenging task, integrating logistics service providers into multichannel structures can yield numerous positive effects.

2.2. Chosen storage methods

The storage method is a crucial element of effective inventory management within the supply chain (Fan, 2010). A 3PL company makes decisions regarding storage methods (Baruffaldi et al., 2020) to ensure optimal utilization of warehouse space, easy access to goods, and minimization of losses and damages. The choice of technical storage means depends on various factors such as the type of goods, their size, weight, durability, and customer requirements. Some of the most popular storage systems in modern warehouses include bulk storage (Sazonova et al., 2021), rack storage (Kostrzewski, 2017; Cormier, Gunn, 1992), very narrow aisle racking (VNA) (Powell, 2015), and Automated Storage & Retrieval System (AS/RS) (Hameed et al., 2019; Lazaro et al., 2023; Yu et al., 2022).

Bulk storage, also known as loose or mass storage, is a storage technique where larger quantities of products are stored together without individual packaging or segregation (Mardaneh et al., 2021). It's a popular storage method in many industries, including the e-commerce sector (Pozzi, 2013). Table 1 provides a concise summary of the advantages and disadvantages of this type of storage.

Table 1.
Advantages and disadvantages of bulk storage

Bulk storage	
Advantages	**Disadvantages**
• Cost-effectiveness. • Quick handling. • Useful for perishable products. • Transportation optimization.	• Lack of segregation. • Risk of damages. • Inventory turnover management.

Source: own elaborated based on: (Kamali, 2019; Pekmez, 2016; Bhisti, Kuhl, 2021).

Bulk storage allows for efficient utilization of warehouse space as it doesn't require individual shelves or racks for each product. This leads to reduced infrastructure costs for the warehouse. Storing products in bulk enables quick and easy loading and unloading, which is particularly useful for products with similar characteristics that can be easily grouped. Bulk storage can be particularly beneficial for items that are not sensitive to storage conditions, such as raw materials or construction materials. Storing in bulk can reduce the amount of packaging, leading to decreased weight of transported goods and transportation costs. However, the lack of individual packaging might make finding specific items more challenging, necessitating accurate labeling and tracking systems. Depending on the type of products, storing in bulk can increase the risk of damages, especially if the products are delicate or sensitive to compression or friction. Effective inventory turnover management is important to prevent products from being held for extended periods, which could lead to obsolescence.

The rack storage method involves storing products on specialized shelves or racks (Cormier, Gunn, 1992). It's a popular inventory management technique due to its advantages in efficiency and organization. Table 2 presents the pros and cons of this storage method.

Table 2.
Advantages and disadvantages of rack storage

Rack storage	
Advantages	**Disadvantages**
• Space optimization. • Work organization. • Easy access to SKUs. • Minimization of losses and damages.	• Infrastructure requirements. • Inventory turnover management. • Costs.

Source: own elaborated based on: (Wang et al., 2022; Park et al., 2020; Addy-Tayie, 2012; Indap, 2018).

Storing on shelves enables the utilization of vertical space, which is particularly valuable in warehouses with limited floor area. This allows for more products to be stored within the same footprint. Shelves facilitate precise organization of products by categories, sizes, types, or expiration dates. This eases inventory management and order preparation. Products stored on shelves are typically easily accessible, speeding up the order picking process and reducing customer service time. Shelf storage minimizes product-to-product contact, which may decrease the risk of damages compared to some other storage techniques. Storing on shelves requires appropriate racks or shelves, which may entail larger investments in warehouse infrastructure. Inadequate inventory turnover management may lead to older products remaining on the shelves, resulting in obsolescence. Despite its numerous advantages, shelf storage can be costly due to the need to purchase and install the shelving.

VNA, or Very Narrow Aisle storage, is an advanced storage technique based on using specialized forklifts and automation systems to enable storing goods on shelves within very narrow aisles (Gue et al., 2006; Fichtinger et al., 2016). The pros and cons of VNA are summarized in Table 3.

Table 3.
Advantages and disadvantages of VNA

VNA storage	
Advantages	**Disadvantages**
• Space optimization. • Increased capacity. • Automation. • Faster handling.	• High costs. • Technical requirements. • Challenges in accessing aisles.

Source: own elaborated based on: (Gue et al., 2006; Hong et al., 2012; De Koster et al., 1999).

VNA allows for the extremely efficient utilization of warehouse space by creating very narrow aisles, resulting in increased available storage area. By enabling storage in narrow aisles, more products can be stored within the same footprint, which is especially valuable for warehouses with limited space. VNA technique is often employed with automated forklifts or conveyor systems, enhancing the efficiency and precision of the storage process. VNA systems allow for swift navigation through narrow aisles, shortening the time required for order picking. Implementing VNA involves high costs, both for specialized equipment and adapting the warehouse to accommodate narrow aisles. Forklifts and VNA systems require specific floor conditions, lighting, and warehouse structure. The narrow aisles might make access to products more challenging, potentially leading to longer handling times.

AS/RS, or Automated Storage and Retrieval System, is an advanced system of automated storage and retrieval that employs specialized machinery, robots, and computer systems to store, organize, and deliver products within warehouses (De Koster et al., 2008; Muralidharan et al., 1995; Manzini et al., 2006). AS/RS is a transformative technology for storage processes, particularly beneficial in the logistics industry, including e-commerce. The pros and cons of AS/RS are presented in Table 4.

Table 4.
Advantages and disadvantages of AS/RS

AS/RS storage	
Advantages	**Disadvantages**
• Automation. • Space optimization. • Speed. • Accuracy.	• High implementation costs. • Vulnerability to breakdowns. • Complexity of management.

Source: own elaborated based on: (Cinar, Zeeshan, 2022; Cunkas, Ozer, 2019; Lazaro et al., 2023; Singbal, Adil, 2019; Sproles, Kuehn, 2014).

AS/RS is a technology based on automation, meaning that many processes such as storage, retrieval, and picking are performed by machines or robots with minimal human involvement. AS/RS utilizes warehouse space more efficiently than traditional storage methods, allowing for the storage of a greater number of products within the same area. AS/RS systems enable rapid retrieval and delivery of products, accelerating customer service processes and order picking. With automation, the risk of human errors is significantly reduced, leading to greater accuracy in inventory management. Introducing an AS/RS system typically comes with high costs due to the need to acquire specialized equipment and adapt the warehouse to the new technology. In the event of an AS/RS system failure, operational downtime can occur, which can have a significant impact on a company's operations. AS/RS systems require advanced management and maintenance, which might pose challenges for some companies.

An operator possessing inventory management skills across various storage techniques like bulk storage, rack storage, VNA, and AS/RS is an invaluable asset for logistics companies and the e-commerce sector. Such an entity is capable of adapting their skills to the specifics of each technique, contributing to optimized inventory management and efficient use of warehouse space. With this ability, the operator can effectively organize, monitor, and pick products, ensuring smooth warehouse operations and meeting customer requirements effectively and punctually. In the article, the following hypothesis related to inventory management by a 3PL logistics operator is presented:

H1: A 3PL company is better equipped to manage the inventory of an e-commerce service recipient.

This hypothesis will be tested based on the conducted case study.

3. Methods

3.1. Case study description

The entity considered in the case study is an international logistics company specializing in providing various logistics services, including the 3PL model, as well as offering warehouse services on the international market. When selecting a company to carry out a case study, it was guided by the fact that it must belong to a group of large enterprises with an established market reputation and serve the e-commerce sales market. As a chosen logistics operator, the entity in question plays a pivotal role in the supply chains of numerous companies. The 3PL model involves outsourcing logistics processes to a specialized external provider. Similar to the investigated 3PL company, the entity manages and organizes logistics activities on behalf of its clients, allowing them to focus on their core business functions. This approach enables companies to reduce operational costs, enhance efficiency, and adapt to fluctuating market conditions. The subject of the case study offers a wide range of logistics services within the 3PL model, including warehousing, transportation, inventory and order management, and value-added services. The investigated 3PL company operates an extensive network of warehouses with varying capacities and specializations, allowing for the storage of diverse goods, from food products to industrial and pharmaceutical items. In terms of warehousing services, the logistics operator utilizes advanced warehouse technologies such as inventory management systems and warehouse automation systems. This enables effective management of goods flow, optimization of warehouse space, and increased precision and operational efficiency.

Moreover, the entity under study places emphasis on sustainable development and social responsibility by implementing eco-friendly practices in its operations. The company operates in areas related to CO2 emission reduction, energy conservation, and transport optimization. The investigated 3PL company is a significant player in the logistics market, offering 3PL services and warehousing services, assisting clients in efficiently managing their supply chains and enabling them to focus on their core business activities. In the context of the discussed case study, the activities of the 3PL company within the provided services for an e-commerce business will be analyzed. The overall distribution network dependencies are illustrated in Figure 1.

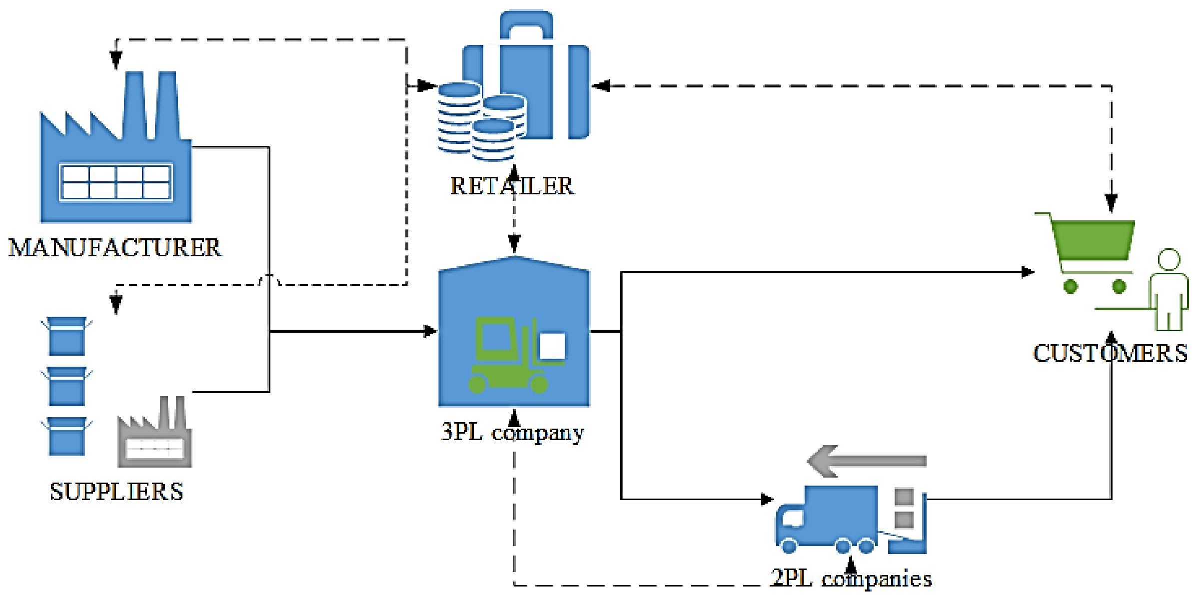

Figure 1. General overview on distribution network.

Source: own elaboration.

In the analyzed scenario, the 3PL company provides operational support for a retailer's warehouse involved in retail sales. Within the distribution network (Figure 1), there are both material flows (solid line arrows) and information flows (dotted line arrows). As seen in the illustration, the 3PL company operates with limited access to information and currently does not engage in activities related to planning or managing inventory location within the warehouse. Instead, it solely provides operational assistance for receiving, storing, and dispatching activities. In the examined case studies, the author investigates the possibility of changing the storage methods and relocating SKUs (Stock Keeping Units) into four storage zones (bulk, rack, VNA, and AS/RS), based on a methodology employed by the logistics operator for SKU classification.

3.2. Data description

In the described case, the examined logistics operator handles a total of 33,894 SKUs. These SKUs occupy an average of 62,493 pallet locations in the last six months, considering the standard EUR1 pallet size. This SKU count represents the status over the past six months. According to the methodology adopted by the retailer, SKUs that haven't experienced any rotation in the last six months are classified as "dead stock", which needs to be removed from the warehouse. The total number of SKUs that have appeared in the records during the collaboration between the operator and the retailer is 144,494 SKUs, indicating a significant level of rotation and turnover of products in the warehouse. The data has been sourced from the Warehouse Management System (WMS) and classified into various groups based on their dimensions, as shown in Table 5.

Table 5.
SKU shares via size category

Category	% of SKU
Extra small	34,63%
Extra small heavy	0,16%
Small	13,69%
Small heavy	0,07%
Medium	8,82%
Large	14,88%
Large heavy	0,01%
Pallet size	6,56%
Oversize	11,06%
Long	10,13%

Source: own elaboration.

The largest number of SKUs belongs to the “extra small” category (34.63%), which complicates the operational management of the stock.

3.3. Main research steps

As part of the warehouse reorganization and the expansion of services offered by the logistics operator, a storage procedure involving the relocation of SKUs to four zones (bulk, rack, VNA, and AS/RS) can be proposed. The main steps taken in the study are depicted in Figure 2.

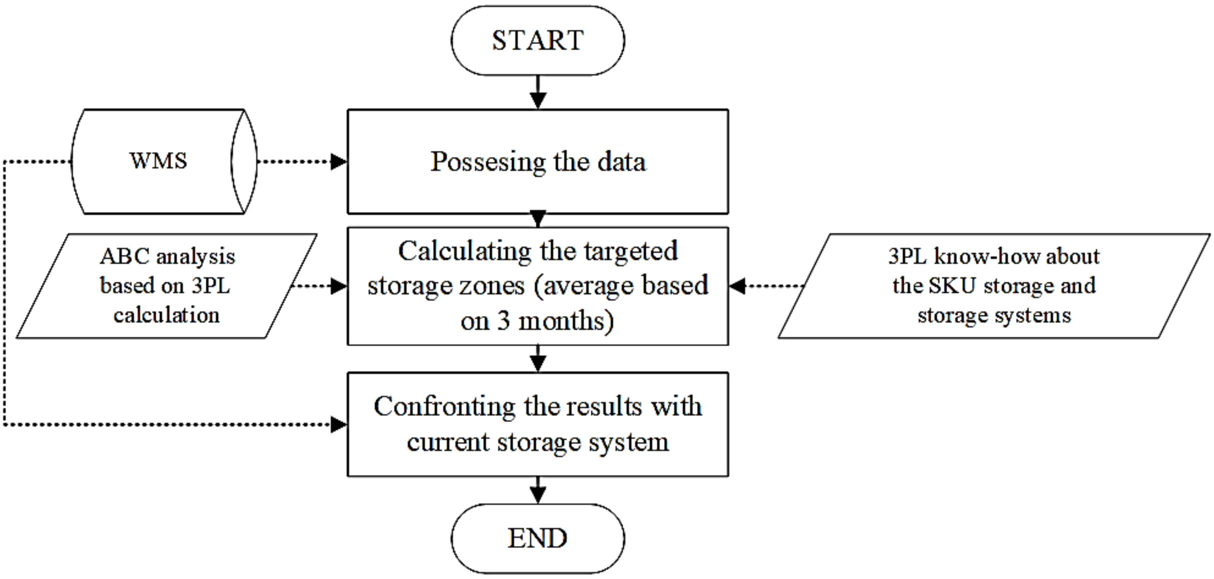

Figure 2. General overview on research procedure.

Source: own elaboration.

Based on the provided data, the information acquisition process occurred through the operator's WMS system, which served as the central point for collecting data regarding the movements of individual products (SKUs). A key aspect of calculating targeted locations involved analyzing various parameters related to specific SKUs. These parameters included information about the size of products, their categorization into appropriate classes considering hazardous nature of products, as well as an analysis of rotation using the ABC methodology. The analysis process focused on identifying optimal locations to which specific products should be directed. Acting based on the company's knowledge, detailed guidelines for allocating individual SKUs to specific storage zones were taken into account. These guidelines, though not disclosed in this article due to their confidential nature, constituted an essential element of the process of optimizing product locations in the warehouse. The data used in the analysis were averaged data collected over a three-month period. The extended data collection period allowed for considering various seasonal and cyclical patterns of SKU movement. Subsequently, the results of the analysis and the assignment of individual products to specific storage zones were confronted with the current SKU location management system as part of the comprehensive inventory management by the retail business. This holistic process of analysis and optimization of product locations in the warehouse constituted a crucial step in effective inventory management, enabling the optimization of product availability, minimization of storage costs, and optimal utilization of warehouse space.

4. Results

Table 6 presents the categorization of SKUs in terms of targeted storage zones for individual SKU categories based on their dimensions, along with the percentage distribution of SKUs to be stored in specific locations.

Table 6.
Category of SKU in the targeted storage zones

Targeted storage zone	Category of SKU (size)	% of SKU stored in targeted location
AS/RS	Extra small	34,63%
AS/RS	Small	13,69%
AS/RS	Extra small heavy	0,16%
BULK	Oversized	11,06%
RACK	Large	14,88%
RACK	Pallet size	6,56%
RACK	Long	0,03%
RACK	Medium	0,03%
RACK	Larg heavy	0,01%
VNA	Long	10,10%
VNA	Medium	8,79%
VNA	Small heavy	0,07%

Source: own elaboration.

In AS/RS, SKUs from the categories extra small, small, and extra small heavy will be stored. Only oversized SKUs will be stored in bulk. In VNA, long, medium, and small heavy SKUs will be stored. The remaining SKUs will be stored in rack. Table 7 illustrates the allocation of the warehouse to respective spaces and the average number of SKUs to be stored within each of them.

Table 7.
Repartition of busy locations in the warehouse and quantity of SKU in targeted zones

Targeted location	Global repartition of busy location	No of SKU
AS/RS	36,15%	15135
RACK	26,08%	6498
VNA	21,86%	8442
BULK	15,91%	3819

Source: own elaboration.

As seen from the table, 3PL proposes the highest number of locations in the AS/RS area, mainly to automate the retrieval and preparation for shipment of small parcels. The comparative analysis was conducted by comparing the currently utilized locations with the targeted storage zones based on the percentage indicators of orderlines, orders, and units picked. Orderlines indicate how many unique orders were placed for a given SKU, and this metric is important as it signifies how many times an SKU location was visited by a picker (each order, regardless of the quantity of ordered units of a specific SKU, counts as one location visit). Orders represent the number of orders for a specific product, and units picked denote the number of picked units for a particular SKU.

Workload-related data based on the aforementioned indicators for the situation where the retailer independently manages SKU locations and stock is depicted in Figure 3. On the other hand, the target scenario in which the 3PL expands its operations to encompass the mentioned elements is presented in Figure 4.

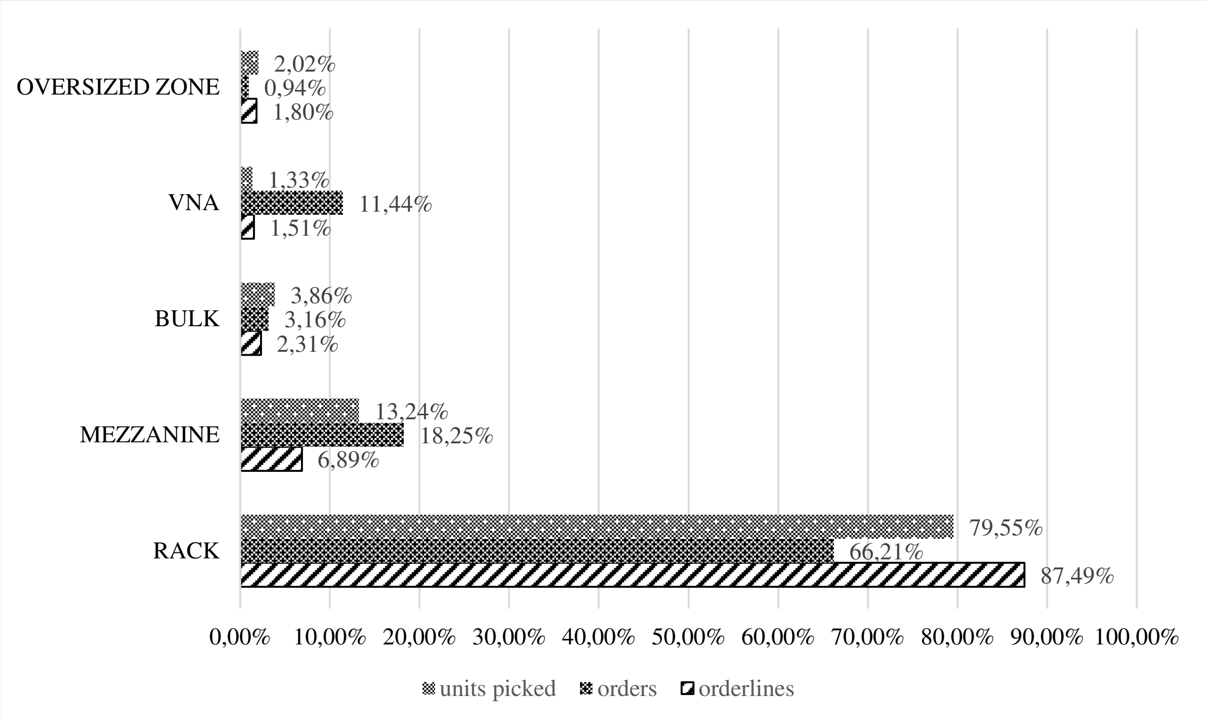

Figure 3. Current repartition of workload in the particular storage zones.
Source: own elaboration.

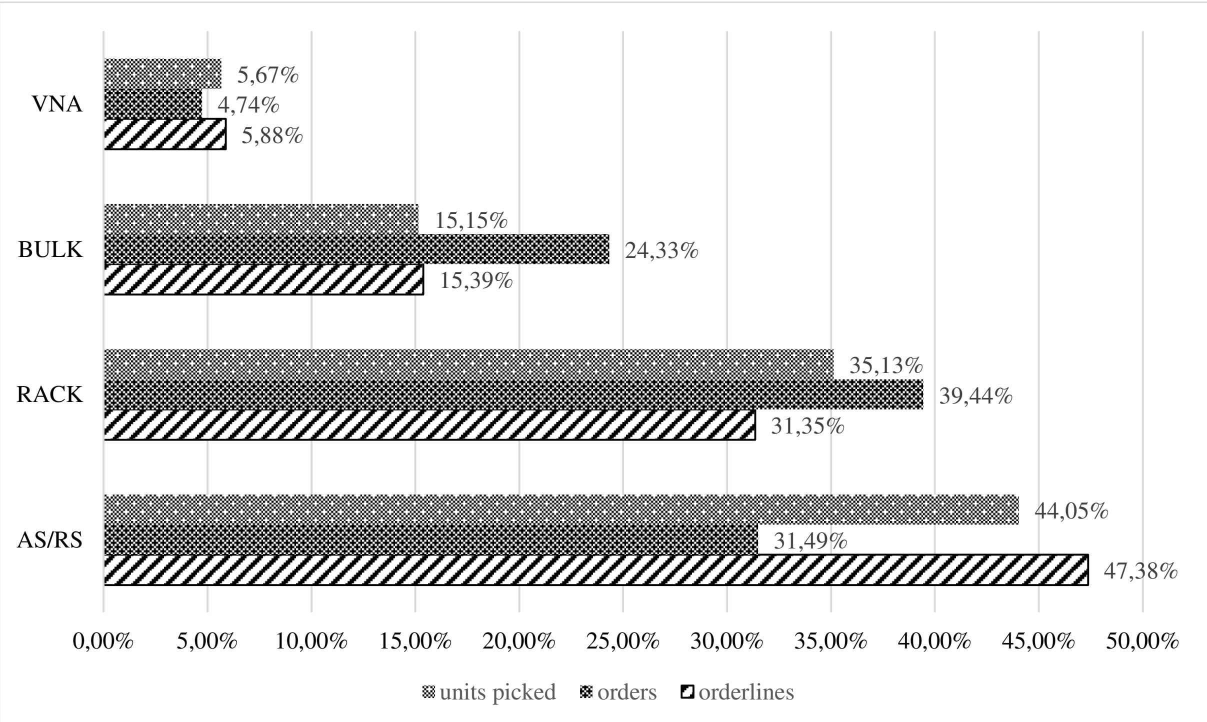

Figure 4. Targeted storage zones repartition of workload in the particular storage zones.
Source: own elaboration.

In the case of managing the e-commerce retailer's stock, the majority of the workload is concentrated on handling SKUs located in the rack. However, when entrusting this function to a logistics operator, it is evident that a better workload balance between different storage zones can be achieved, and a higher level of automation can be realized by leveraging AS/RS to a greater extent than picking from racks. The conducted research allowed for a positive validation of the hypothesis stated (i.e., the 3PL company is capable of better inventory management for the e-commerce service recipient). The logistics provider has the opportunity to implement an improved inventory management system based on location management and automation of the storage process, leveraging the logistics service provider's know-how.

5. Discussion

5.1. Stock management by 3PL in the case of e-commerce activity

This study aimed to investigate the effectiveness of third-party logistics providers (3PL) in inventory management for retail companies operating in the e-commerce market. The research hypothesis suggested that 3PL companies are capable of enhancing inventory management for e-commerce service recipients. The results of this study support and confirm the proposed hypothesis, indicating that 3PL providers can indeed introduce improved inventory management systems based on location management and warehouse automation, utilizing their logistic capabilities. In recent years, the e-commerce industry has experienced exponential growth (Risberg, 2023; Kedah, 2023; Lucas et al., 2023), presenting challenges for efficient inventory management (Pourhejazy, 2020) due to the dynamic nature of consumer expectations (Ingaldi and Ulewicz, 2019) and the need for swift order fulfillment (Camilleri, 2021). Consequently, many companies have turned to 3PL providers (Ngah et al., 2021; He et al., 2019; Yan et al., 2023) to address these challenges and optimize inventory management processes.

The results of this study underline the significant role that 3PL providers play in enhancing inventory management for e-commerce enterprises. Through the implementation of advanced systems based on location management strategies, these providers can effectively allocate products in strategic geographical locations, minimizing delivery distances, and accelerating order fulfillment. Furthermore, the integration of warehouse automation technologies further streamlines storage and retrieval processes, reducing human errors and enhancing overall supply chain efficiency. The positive findings observed in this study align with previous research that highlighted potential benefits of partnering with 3PL providers in inventory management (Kmiecik, 2022; Skender et al., 2022; Zissis et al., 2019; Parasad, Venkatasubramanian, 2019; Al. Mesfer, 2023). Nonetheless, this study goes beyond existing literature, focusing particularly on the context of the e-commerce market and showcasing the case of assuming functions previously carried out by e-commerce retailers for the handling of a large quantity and variety of SKUs. The results demonstrate that leveraging 3PL capabilities can bring even more significant improvements in inventory management when applied in the dynamic and rapidly evolving environment of online retail. However, it's important to recognize that the effective implementation of inventory management systems by 3PL requires a comprehensive understanding of the unique requirements and characteristics of each e-commerce enterprise. While the results support the overall effectiveness of the proposed approach, factors such as product diversity, demand variability, and market positioning can influence the optimal design and adaptation of inventory management strategies.

5.2. Main limitations and further research directions

The main limitation of this study is that it presents results based on a single case study and focuses on a logistics operator with substantial experience and an established market position. To delve deeper into this topic, future research could concentrate on a detailed analysis of the implementation of advanced inventory management systems in diverse e-commerce enterprises. Such studies could provide new insights, considering the variety of industries, product types, and operational scales that influence inventory management strategies and effectiveness. One of the key areas for investigation would be the assessment of the implementation process of advanced systems in practice. This would help understand the challenges that may arise when adapting these systems to the specific needs and characteristics of e-commerce enterprises. The analysis would encompass technical, organizational, and cultural aspects, as well as the effects of changes on the entire supply chain and customer relationships. Furthermore, a significant topic for examination would be the long-term sustainability of the introduced solutions. Research could evaluate how these advanced systems impact profitability, resource savings, and the environmental aspects of business operations. Do the introduced changes contribute to waste reduction, greenhouse gas emission reduction, and an overall more sustainable approach to logistics? Given the dynamic changes in the e-commerce market, the adaptive capabilities of the implemented solutions would also require investigation. How do these systems perform in situations of changing market trends, seasonal demand fluctuations, or unexpected crises? Research on adaptability will identify whether these systems are flexible and effective in a changing environment. All these aspects could provide deeper insights into the effectiveness and future prospects of inventory management systems in e-commerce. Future research will be crucial in shaping logistics strategies for companies in the dynamically evolving e-commerce landscape.

6. Conclusions

This article constitutes a significant contribution to the expanding realm of research regarding the role of third-party logistics providers (3PL) in enhancing inventory management, particularly in the context of e-commerce. The added value lies not only in confirming the positive hypothesis but also in emphasizing the immense potential that 3PL providers possess in implementing advanced inventory management systems based on location strategies and warehouse automation. As the e-commerce industry continues to evolve, companies face growing challenges in efficiently managing their inventories. The dynamic nature of consumer demand and the need for efficient order fulfillment require sophisticated logistics and warehousing approaches. In this context, collaboration with 3PL providers becomes pivotal as it allows companies to access logistics expertise and modern technologies, enabling them to adapt effectively to changing market conditions.

The positive results observed in the study confirm that 3PL providers can implement optimized inventory management systems that significantly contribute to shorter delivery times, minimized logistics costs, and increased efficiency throughout the supply chain. As e-commerce continues to evolve, businesses are compelled to continuously refine their logistics strategies. In this context, partnering with 3PL providers becomes a key element in achieving success. Effective inventory management, enabled by advanced systems and the knowledge of 3PL providers, translates into customer satisfaction through faster and more reliable deliveries. To further deepen the understanding of this topic, future research could focus on analyzing the implementation details of advanced inventory management systems in diverse e-commerce enterprises. Additionally, investigating the long-term sustainability of these solutions and their adaptability in a dynamically changing market environment will also be crucial.

List of abbreviations

2PL – second-party logistics.
3PL – third-party logistics.
AS/RS – Automated Storage & Retrieval System.
SKU – Stock Keeping Unit.
WMS – Warehouse Management System.
VNA – very narrow aisle racking.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

BUILDING VIRTUAL ORGANIZATIONAL RELATIONSHIPS IN THE ERA OF SOCIETY 5.0

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Purpose: The article aims to present the role of technology in the process of building interpersonal relationships, taking into account a comparison of the characteristics of virtual and face-to-face relationships. To achieve the paper's aim, the following research questions were posed: Which devices are used in relationship building? Which relationship characteristics are characteristic of virtual relationship building?

Methodology: The method used for the study was a survey, the technique of which was an online survey, and the research tool was a questionnaire, created in Google - forms. The objective was realized through a survey, carried out within the field of virtual relationship building.

Findings: The results of the research indicate that laptops, phones and smartphones are key tools used in the process of building organizational relationships, which may indicate their high functionality and versatility in the context of remote working and communication. Among the characteristics that characterize remote working, respondents included the opposites (those perceived as positive) of stationary work and pointed to limited sensory experiences and emotions, lack of a sense of proximity, and reduced mutual understanding and trust. The survey also notes that, of some factors, those favouring remote working included access to IT infrastructure, clarity of objectives, effective motivation to limit indicated long contact building time, bureaucracy or costs for the employee. On the other hand, bureaucracy and selected economic factors were seen as neutral.

Research limitations/implications: The survey was targeted at a small number of students in the Faculty of Management. In addition, the research should be broadened to include an expert interview and target the survey at entrepreneurs and their employees. It is also worth investigating whether the presence of stimulating and inhibiting factors have the same impact on building face-to-face and virtual relationships**.**

Research implications: The study can contribute to a better understanding of the dynamics of contemporary interpersonal relationships, both in virtual and face-to-face contexts.

Practical implications: The article points out what role modern technologies play in “Society 5.0” and how their appropriate use contributes to building interpersonal relationships.

Originality/value: Provides information on building virtual organizational relationships.

Keywords: relationship building, virtual relationships, relational factors, relationship characteristics.

Category of the paper: Research paper.

1. Introduction

Relationship building in enterprises is a key element of their functioning. Relationships can be analyzed in various contexts (Drewniak et al., 2020) direct (interpersonal, organizational - about 2,500,000 results in the search engine "Google Scholar") and virtual (about 1,140,000 results in the search engine "Google Scholar"). The very fact of the number of results of indications can testify to their role and importance for the functioning of organizations, which is confirmed by the interest of researchers (Huynh, Hua, 2020; Mlokosiewicz, 2015; Santoro et al., 2020; Szydełko, 2014).

The notion of society 5.0 has been evolving since 2015 as part of Japan's strategic development plan, intending to integrate digital and physical areas so that technology serves humans in achieving well-being (Ferreira, Serpa, 2018). The document points to the rapid changes taking place not only in Japan but also globally, highlighting the key role of science, technology and innovation in the pursuit of sustainable development. The plan is a signpost to the prosperity of Japan and the world. Chapter 2 of the plan introduces the concept of "Society 5.0" or "super-intelligent society", in which advanced information and communication technologies are used to create a high quality of life for citizens through innovative services and solutions (Council for Science, Technology and Innovation, 2016). In such an arrangement, organizations are to be formed with digitization as their overarching task.

2. Community Development in the Context of Relationship Building – a review of the literature

In organizations, business and information systems are to become one using digital solutions as the basis for creating a story of value creation in building relationships with society as a whole (Pearce, Gaffney, 2020). The stages of development of society and its characteristics are shown in Table 1. Each earlier model of society has had its impact on the development of the next one and thus contributed to the formation of "Society 5.0", based on digitization in which advanced technologies are used, inevitably and dynamically transforming the virtualization of the workplace. The concept has gained international attention as a model for countries pursuing sustainable development and using technology to improve the quality of life.

Table 1.
Shaping Society 5.0

Society Model	Characteristics
1.0 A society based on hunting	The main goal of the society is to survive in a nomadic lifestyle. Use of primitive skills (hunting, gathering, stone and/or bone tools). Non-productive society
2.0 Land-based society	The main goal of the society is to develop agriculture in a settler lifestyle. To take advantage of land opportunities and barter (gemstones) to be self-sufficient
3.0 Industrial-based society	The main goal of the society was mass production through the development of factories and production machinery. Economics (profit, income, wage) was used, which emphasized material goods-a context was created: labour-capital-land
4.0 Information-based society	The main goal of society is to use technology in the context of creating innovative organizational solutions. Development of the Internet of Things. Used information as a key aspect of development
5.0 A Society Based on Artificial Intelligence	The main goal of human development is to use artificial intelligence and integrate cyberspace with the physical dimension. Focus on human well-being and the use of artificial intelligence (AI)

Source: own compilation based on (Narvaez Rojas et al., 2021; UNESCO, 2021).

The vision of society 5.0 is being developed and adapted to new technological and social problems/challenges. In the face of global issues such as the COVID-19 pandemic, climate change and social inequality, the idea seems increasingly relevant to the future direction of societies around the world, but it requires the cooperation of governments, industry, academia and societies. The final shape and results will largely depend on how the idea is implemented and adapted in practice.

In the context of building virtual business relationships, access to digital technologies can facilitate communication, because it allows contacts independent of place and time. However, there is also a danger in this area from the blurring of the boundaries of professional and personal life. Creating and maintaining relationships through digital technologies, began to gain importance with the development of the Internet and communication technologies. The development of the Internet began in the 1970s and 1980s when the first services were offered through chat rooms and email. By the end of the 1990s, the Internet was already in widespread use and the first instant messaging and social networking sites began to form virtual relationships. People began to build personal and professional relationships via the Internet, regardless of spatial distance (Leiner et al., 2009; Townsend, 2001). At the beginning of the 21st century, smartphones and mobile applications appeared, which significantly translated into the range of possibilities for building virtual relationships (Vijayalakshmi, Raikar, 2021). Greater interaction and staying connected online became possible through a wide range of apps, video or streaming platforms (e.g., WhatsApp, Messenger, Snapchat, YouTube, Zoom, Teams).

Building virtual relationships is undoubtedly a challenge for companies and their employees, as it requires not only knowledge of online communication tools, but also the development of new interpersonal skills, adaptation to the changing conditions of remote work, and maintaining engagement and motivation at a distance. However, regardless of the changes, each relationship, whether built in the real or virtual sphere, has its characteristics (shown in Table 2).

Table 2.
Factors for building relationships

Factors	Features	
	Face-to-face relationships	Virtual relationships
Communication	Rich non-verbal communication (body language, eye contact, facial expressions). Understanding the context and adapting to the situation. Affective communication	Limited nonverbal communication. Written, video and audio communication. Distractors are present. This may require additional explanation because participants do not share the same space
Trust	Personal interaction and experience. Protected privacy. Trust is built with a specific, tangible person. Adherence to socially acceptable norms Requires consistent and reliable online behaviors	Conversations may be recorded. Exposed to misunderstandings due to lack of non-verbal context
Technology	Technology provides support for relationship building, meetings require coordination of space and time (and costs associated with getting to the meeting location)	Reliable platforms, with clear interfaces, the ability to connect with people regardless of location and time. High dependence on the reliability of infrastructure
Organizational culture	Clear rules and management structure influence expectations for behaviour and interaction. Willingness to take on challenges determined by identification e- community at work	Sense of "freedom", and flexibility in working hours. Lack of feeling of social ties with employees
Management of employees	Embedded in the culture of the organization - degree of centralization/decentralization. Contributes to organizational change by increasing motivation to engage in change among co-workers. Managers have continuous access to employees. Work outcomes visible	Proactive engagement and use of digital tools to monitor and support teams by managers. Work monitoring limited Adapt to cultural and structural influences. Work effects are visible through reports provided, etc.
Engagement	Based on personal interaction and physical presence. Focus on action in the here and now.	Require structured activities that promote relationship building - use of interactivity and media. One can be involved in multiple tasks simultaneously
Adaptability	Dependent on circumstances. Require constant monitoring of the environment. Changes are easier to notice and implement.	Require greater flexibility, due to the dynamic nature of technology and virtual work environments. More difficult to adapt to changes.

Source: own compilation based on (Blanco-Fernández et al., 2022; Espíndola et al., 2021; Flieger, 2023; Gogan, 2008; Kimble, 2011; Lehmann, 2007; Słupska et al., 2020; Squicciarini et al., 2011; Wawrzynek, 2023).

The factors indicated in Table 2 are interrelated and can affect the strength and quality of both face-to-face and virtual organizational relationships. The changes taking place make it crucial to understand in which direction the nature and quality of organizational relationships are transforming. Given this, it becomes equally important to determine the interpersonal aspects of collaboration using various communication tools.

3. Research Methodology

The purpose of this study is to present the role of technology in the process of building interpersonal relationships, taking into account a comparison of the characteristics of virtual and face-to-face relationships. To achieve the purpose of the thesis, two research questions were posed:

1. Which devices are used in relationship building?
2. Which relationship characteristics are characteristic of virtual relationship building and which are characteristic of stationary relationships?

The survey was a pilot study and was conducted on professionally active students of the Faculty of Management at Bydgoszcz University of Technology in June 2023. The main survey will target approximately 300 employees of small and medium-sized enterprises. Students of the Faculty of Management participated in this survey. The selection of students for the pilot study was convenient, due to the availability of students for classes and the fact that some of the classes are conducted remotely. The students were chosen because they reconcile both study and work. In addition, some students are pursuing classes remotely. The study covered three research areas - young employees' perceptions of aspects of remote work, ergonomics of remote work and building virtual relationships. The article presents the last element of the completed study. The study used a survey method, the technique of which was an online survey, while the research tool was a questionnaire, created in Google's tool - form. The survey questionnaire was created based on literature studies in both Polish and foreign languages. The questionnaire consisted of five sections - an introduction, which outlined the research objectives, an assurance of anonymity, and information related to completing the questionnaire. The next three sections were related to the scope of the research areas. The virtual relationship-building section contained 4 closed-ended questions on virtual relationship-building tools, characteristics that constitute virtual and stationary relationships, and factors affecting the ability to build virtual relationships. In addition, respondents were asked an open-ended question to identify barriers to building virtual relationships. The last part of the questionnaire consisted of demographic and social questions, based on which respondents were characterized (Table 3).

Table 3.
Distribution structure of respondents by selected demographic and social characteristics

Gender (number)		**Age (years)**			**Place of employment (number)**		**Type of contract (number)**		
K	**M**	**18-29**	**30-39**	**40-49**	**private sector**	**public sector**	**employment contract**	**civil law**	**contractual contract**
26	27	44	7	2	50	3	34	16	3

Length of service (years)			**Place of work (number)**				**Level and mode of study (number)**			
Up to 1 year	**from 1 to 5**	**More than 6 years**	**large city**	**medium city**	**small city**	**village**	**SS I^0**	**SN I^0**	**SS II^0**	**SN II^0**
16	28	9	33	6	13	1	18	11	3	21

Source: own elaboration based on the results of the survey.

4. Research Results and Discussion

Students who were working were asked to fill it out. Sixty-three students participated in the survey, while 53 correctly completed questionnaires were allocated for analysis. The results obtained are presented using the structure index (Bak et al., 2020; Zimny, 2010).

Respondents were asked which tools they use when building organizational relationships. The results obtained are shown in figure 1.

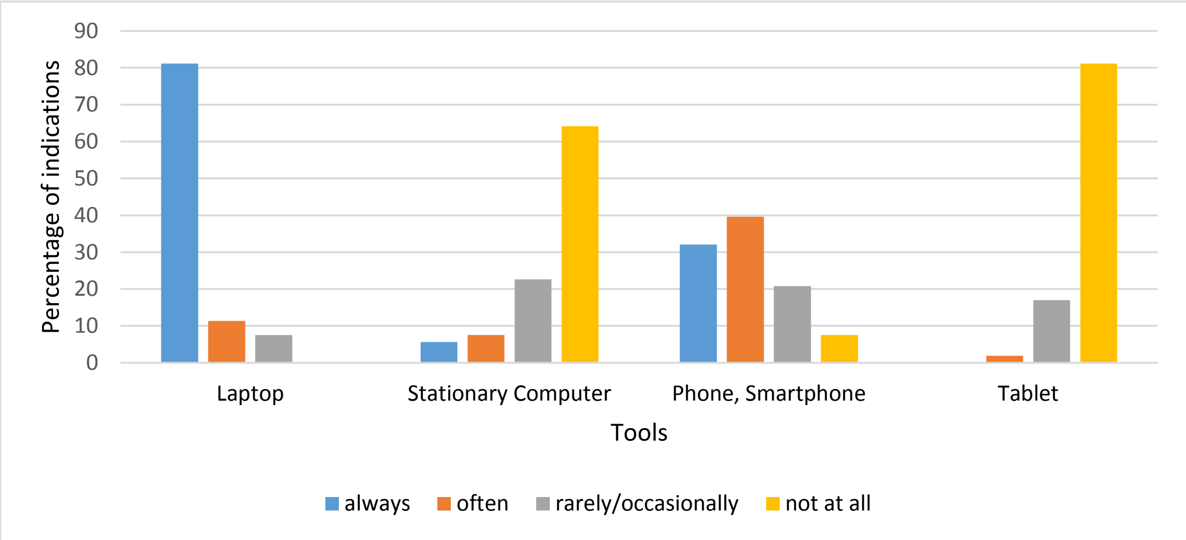

Figure 1. Tools used to build relationships [%].

Source: own compilation based on the survey results.

As can be seen in Figure 1, laptops are a key tool used in the process of building organizational relationships, which may indicate their high functionality and versatility in the context of remote work and communication. The majority of respondents (81% of indications) always use laptops, underscoring their dominant role as the preferred device for working and maintaining professional relationships.

Phones and smartphones are also widely used, albeit to a slightly lesser extent (92% of respondents), suggesting that they are an important but complementary tool for remote work, probably due to their mobility and ease of access to communication functions. On the other hand, tablets and desktops are noticeably less popular among respondents as tools for building organizational relationships. As many as 81% of respondents do not use tablets at all, which may indicate their limited functionality or less convenient user interfaces in terms of the required communication and teamwork. Similarly, 64% of respondents do not use desktops, which may reflect a growing preference for mobile and flexible forms of work that laptops and mobile devices offer.

Respondents were also asked to indicate which qualities are characteristic of building relationships in remote work and which are characteristic of relationships in desktop work. Respondents were presented with 15 pairs of factor - characteristics that were their opposites. The results obtained are shown in figure 2.

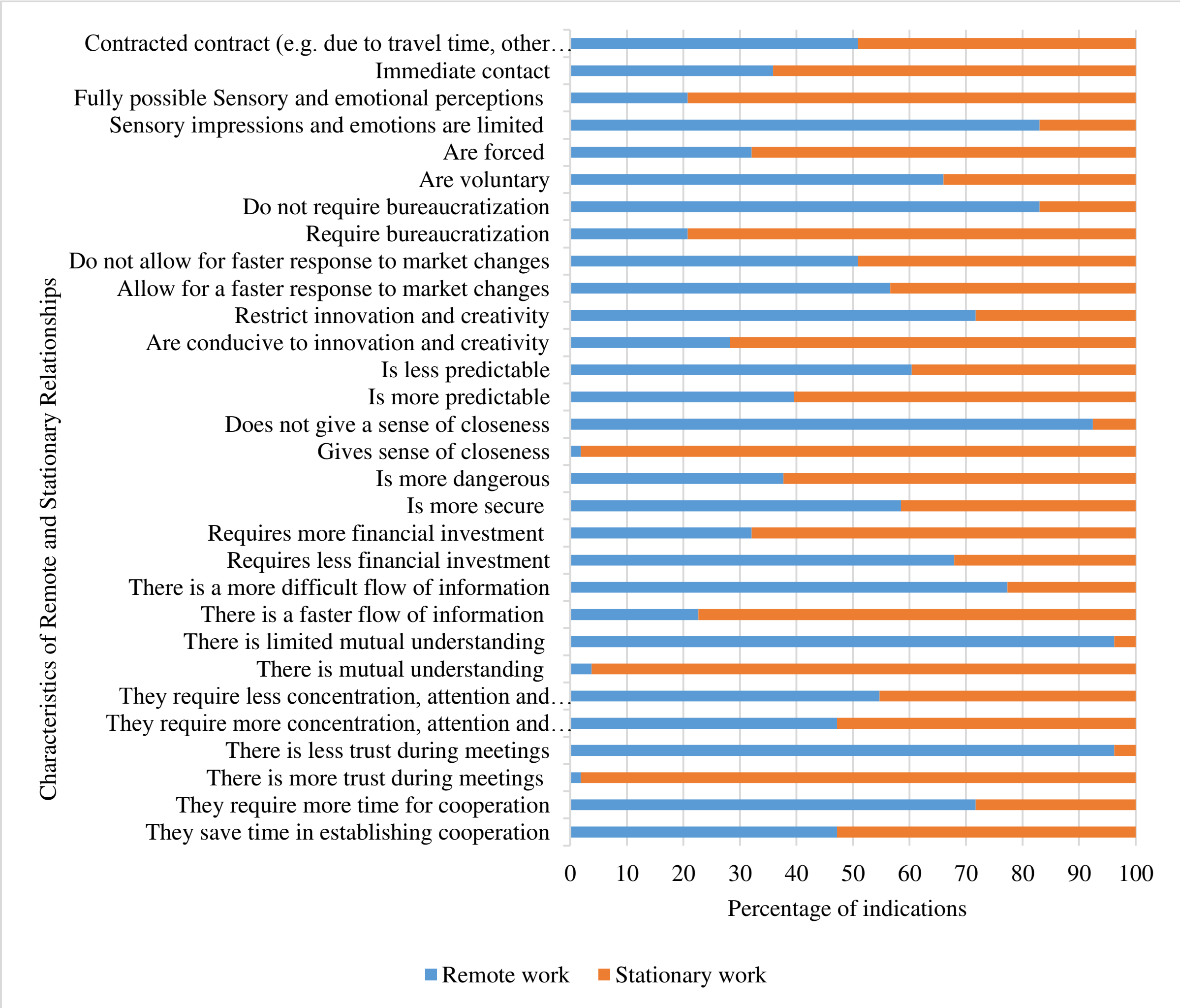

Figure 2. Characteristics of relationship building in remote work and stationary work [%]

Source: own compilation based on the results of the survey.

Based on the data presented in Figure 2, it can be noted that:

- Remote work may be perceived as less effective in building trust and understanding: The results show that almost all respondents (96% of indications) believe that remote work is characterized by less trust in meetings and limited mutual understanding. This may indicate communication and interpersonal challenges resulting from the lack of face-to-face contact.
- There is a noticeable lack of a sense of closeness in remote work (92% of indications), which may affect the quality of interpersonal relationships and sense of community among remote workers.
- Responses indicate a significant reduction in sensory and emotional experiences (83% of indications) in remote work, which may be the reason for difficulties in fully understanding and empathizing with colleagues.
- Remote work appears to reduce bureaucratic requirements (83% of indications), which may suggest greater flexibility and less formal procedures.

- Working remotely seems to hinder information flow (77% of indications) and require more time to collaborate (72% of indications), which may be related to the need to manage communication in distributed teams.
- Remote work limits innovation and creativity (71% of indications), which may reflect the lack of spontaneous exchange of ideas that often occurs in a desktop environment.
- Stationary work seems to be much better at fostering trust, a sense of closeness and mutual understanding, as evidenced by very high percentages of indications (98% and 96% of indications).
- Stationary work allows full sensory and emotional perception (79% of indications), which can contribute to stronger and more integrated interpersonal relationships.

Both remote and stationary work have their advantages and disadvantages in terms of responsiveness to market changes and demands for concentration, attention and commitment, indicating the complexity and non-linearity of the impact of work form on these aspects.

Respondents were also asked to indicate (up to 3) barriers to building relationships in remote work. 3 people entered no barriers, indicating that there were none, while 50 people showed a range of barriers, which could allow for a list of 26 unique barriers. Analyzing the respondents' answers, there are several recurring barriers to building relationships in remote work, as shown in Table 4.

Table 4.
Barriers to building relationships in remote work

Barrier category	Number of indications	Interpretation
Communication	49	Lack of face-to-face contact is the most frequently mentioned barrier. Respondents emphasize that the inability to meet face-to-face, lack of eye contact and lack of physical presence hinder relationship building and communication. Difficulties in communication, including understanding the content conveyed, formal style of speech, difficulty in describing problems, language barrier and problems with non-verbal communication are frequently mentioned.
Work organization	28	Varying work hours, difficulty fitting into the schedules of others, passive participation in meetings, and the need to separate work and private life are cited as impediments
Isolation and lack of social interaction	23	Respondents note that the lack of informal interactions, a sense of belonging, spontaneity and the opportunity to talk freely negatively affects interpersonal relationships.
Technological	19	Many responses point to internet problems, poor connections, internet outages, technical infrastructure problems and hardware limitations as barriers to remote work.
Other	6	Barriers such as anonymity, information overload, company policies, conservative attitudes of superiors, or limitations on making new contacts are also mentioned.

Source: own compilation based on survey results.

Communication difficulties are particularly evident in remote work, where the majority of interactions take place via written messages or video calls. The lack of face-to-face contact can lead to misunderstandings, and difficulties in expressing, interpreting emotions and understanding the content being conveyed. Remote work eliminates the possibility of being physically present, which has a major impact on interpersonal relationships. Direct contact is often considered essential for building trust, understanding non-verbal signals and creating strong team bonds. Lack of opportunities for spontaneous conversations or observable reactions can lead to feelings of isolation and hinder effective collaboration. Issues such as unstable internet connections, equipment failures or unfamiliarity with communication tools can significantly impede smooth workflow and communication. These are barriers that can lead to frustration and delays in completing tasks. Remote work can lead to a sense of isolation, as employees are cut off from daily interactions with co-workers. The lack of informal conversations and spontaneous meetings can affect the sense (or rather, lack thereof) of belonging to the team and organization. Different time zones, work schedules and individual approaches to tasks can make coordination and collaboration difficult. In addition, working remotely requires employees to be more self-disciplined and able to manage themselves on time, which many find extremely challenging. Barriers identified as others can affect how remote work is perceived and managed within an organization, as well as how employees can engage with their tasks.

Respondents were also asked to rate relationship-building factors in remote work. Of the 21 factors, respondents selected those that favour, or hinder virtual relationship building as well as those that are considered neutral. The results obtained are shown in figure 3.

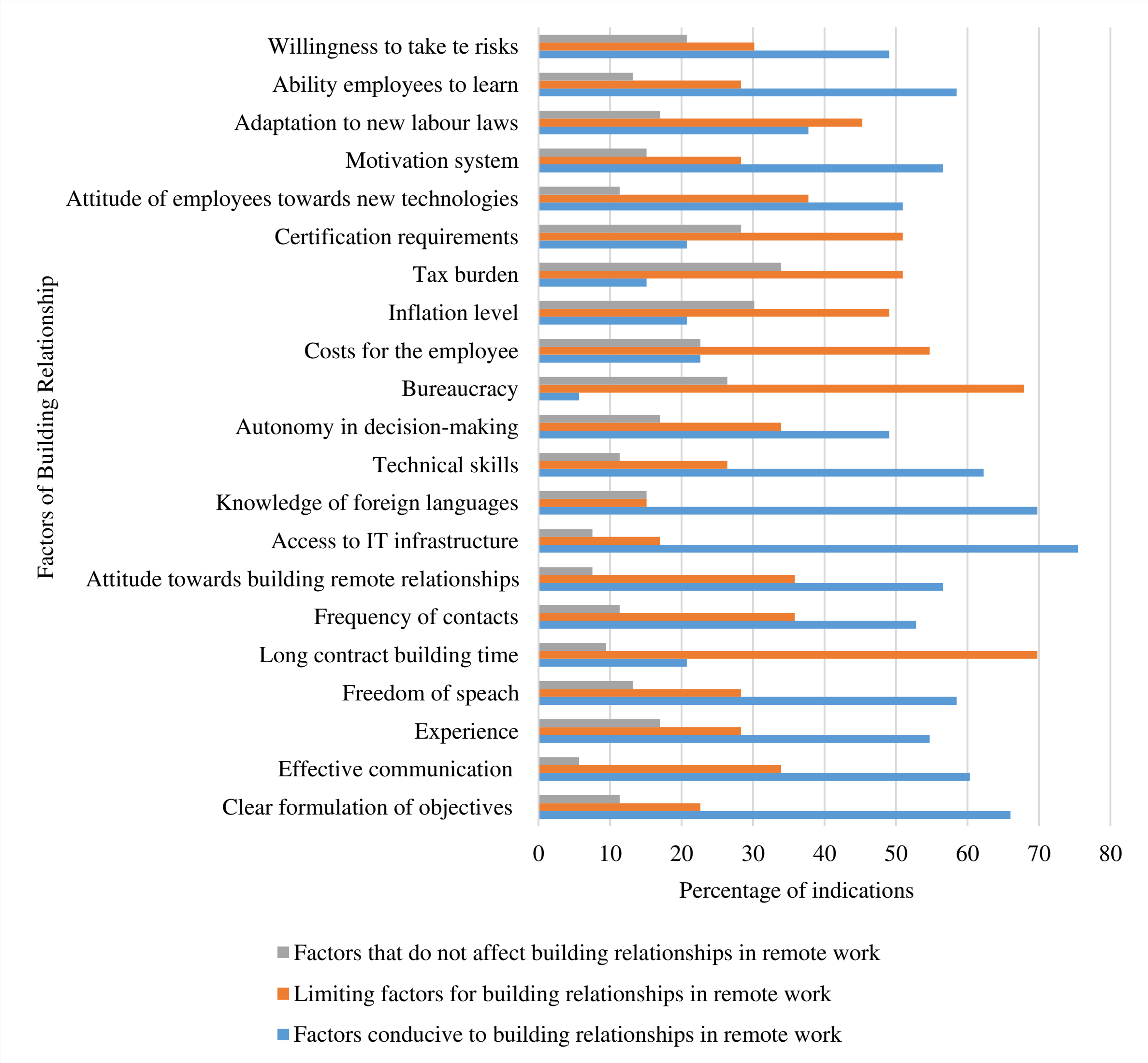

Figure 3. Factors and their impact on relationship building [%].

Source: own compilation based on the survey results.

The results presented in Figure 3 show how survey participants perceive various aspects of remote work and their impact on relationship building. Among those conducive to building relationships in remote work, respondents indicated:

- Access to IT infrastructure (40 indications- 75%) and language skills (37 indications – 69%) are the most frequently cited by respondents in this regard. Access to high-speed Internet, appropriate hardware and software is essential for making video calls, sharing files and managing projects online. Respondents' indications may suggest that employees value the ability to communicate easily and effectively, as well as access to technological tools that support it. Foreign language skills are important in international work environments, where communication with stakeholders from different countries takes place daily. In a global remote work environment, the ability to communicate in different languages is invaluable. It helps break down cultural barriers and gain a better understanding between employees from different parts of the world.

- Clear goal formulation, effective communication, experience, free speech, attitude toward building remote relationships, technical skills, motivation system, and employees' ability to learn are also considered important, with indications above 30 responses (60%-66%). Clarity of goals and expectations are key to ensuring that all team members are focused on the same results. This helps avoid misunderstandings and ensures that everyone knows what is expected of them. Open and regular communication is essential to build trust and foster cooperation. Effective communication helps solve problems, share ideas and keep the team together. Experienced employees can support the process of overcoming the challenges of working remotely. Experienced employees can better handle unexpected problems and can act as mentors for less experienced colleagues. An organizational culture that encourages freedom of speech allows employees to express their opinions and ideas, which can lead to innovation and greater engagement. Positive attitudes toward remote work and a willingness to build relationships remotely are important for team building. Employees who are proficient with modern information technologies (platforms, apps) can spur collaboration, share knowledge and build lasting organizational relationships. Technical skills are essential for effective use of available tools and technologies. Incentive systems that value and reward employees for their contributions can significantly affect their commitment and willingness to build relationships. In the rapidly changing world of remote work, the ability to continuously learn and adapt is critical. Employees who are willing to learn new skills and adapt to changing conditions can better collaborate and develop relationships. Indications may suggest that employees value clarity of expectations, openness to communication, opportunities for growth and participation in an organizational culture that supports motivation and continuous learning.
- Autonomy in decision-making and risk-taking are considered less important and still influential, with scores above 25 indications (49%), which could mean that employees value a degree of independence in remote work. Employees who feel empowered to make decisions and take risks may be more creative and willing to explore new ways of working together.
- Bureaucracy (3 indications, 5%) was considered the least important enabler.

On the other hand, factors limiting relationship building in remote work are:

- Long contact-building time (37 indications - 69%) is often considered a limiting factor, which may reflect the difficulty of building lasting relationships devoid of face-to-face contact. Remote work often eliminates the opportunity for spontaneous interactions, which in a traditional work environment helps build relationships quickly. Lack of face-to-face contact can lead to slower development of trust and understanding between co-workers, which is essential for effective collaboration.

- Bureaucracy (36 indications 67%), costs for the employee (29 indications 54%), inflation levels (26 indications 49%), tax burdens (27 indications 50%), and certification requirements (27 indications 50%) are also considered by survey participants as significant obstacles, suggesting that the administrative and financial aspects of remote working may negatively affect employee relationships. Bureaucracy can be seen as a constraint due to the complexity of processes and procedures, which are more difficult to manage remotely. This can include difficulties in accessing information, approving documents or communicating between departments, which can hinder the fluidity of work and relationship building. Employees may incur additional costs associated with working remotely, such as home office equipment, and higher energy or internet bills. These additional financial burdens can affect their job satisfaction and relationship with their employer. Economic factors can affect employees' ability to maintain an adequate standard of living, which in turn can affect their overall mood and ability to build positive working relationships. Certification and training requirements may be more difficult to meet in a remote working environment, which can lead to frustration and isolation among employees who may feel less competent or less valuable to the organization.
- Effective communication and autonomy in decision-making (18 indications each 33%) were considered less important barriers, but still important barriers, and their presence in this category may indicate that they can be challenging in certain circumstances. Effective communication, although considered an enabler, can be a barrier in situations such as technological problems, time differences between teams or when team members are not used to remote communication. Autonomy, on the other hand, can be limited in remote working if there are no clear guidelines or if employees do not feel safe without direct support and validation from supervisors or colleagues. Language skills (8 indications 15%) and access to IT infrastructure (9 indications 16%) are rarely considered as barriers. Interestingly, they are often considered as enablers for the development of remote relationships. Although they are key, they can become constraints when employees lack adequate language skills or when the IT infrastructure is inadequate, making smooth communication and collaboration difficult. This can mean that the same factors that are usually considered helpful can be challenging in certain circumstances (for example, when the infrastructure is inadequate or when language barriers are too high).

Respondents cited factors that do not affect relationship building when working remotely:

- Bureaucracy (14 indications 26%), inflation levels (16 indications 30%), and tax burdens (18 indications 33%) were the most frequently indicated factors as having no impact, which may indicate that employees do not consider them to be important in their daily remote work or relationships. Although bureaucracy was also cited as a limiting factor, for some respondents it had no impact on relationship building. This may suggest that some employees have accepted bureaucratic processes as an integral part of the job and do not see them as an obstacle to relationships or that they have sufficient tools to manage them. Economic factors, on the other hand, may not directly affect day-to-day interactions and relationship building when working remotely but may have a lasting impact on employees' job satisfaction and loyalty. Their neutral stance may indicate that employees understand that these are external factors over which they have limited influence. Certification requirements may be considered neutral because some employees may not experience their direct impact on their ability to build relationships, especially if they are well managed by the organization.

- Effective communication (3 indications 5%) was rated by respondents as having the least impact, which is surprising given its importance in the other categories. This may suggest that the majority of respondents considered communication to be very important, but few felt it did not have an impact on relationship building. Furthermore, for some employees, communication may already be so well integrated into remote working that they do not see it as an element that can be improved or developed.

5. Summary

Researchers in various aspects of the organization recognize the importance of communication in the process of building relationships. Y. Kim strategically places internal communication with employees in the aspect of the occurrence of a crisis in the organization (Kim, 2021). In turn, N. Yusuf, C. Mustafa and B. Mohamad note that transparent communication is the most essential element in changing the negative impact of perceptions of organizational culture to a positive impact on corporate reputation (Yusuf et al., 2018). R. Berkley and G. Watson place communication in the aspect of the superior-subordinate relationship (Berkley, Watson, 2009). Effective communication is an important element in building relationships in remote work. Although some respondents consider it a limiting factor, others find it conducive. The quality and effectiveness of communication tools have a direct impact on the quality of relationships between employees, so these tools must be intuitive and customizable, enabling effective information exchange.

Modern technologies (VR - virtual reality, AR - augmented reality, blockchain, AI - artificial intelligence, cloud computing) are opening up new possibilities for the use of the Metaverse (collective virtual space) in the context of integrating virtual relationships in not only professional but also personal life (Huo, Feng, 2021; Shannon, 2023; Wynn, Jones, 2023; Ziolkowska, 2017). Over the past 50 years, a range of tools and modes of interaction have emerged - from simple forms of text-based communication to multimedia interactions in the virtual realm. Technical skills are important in the context of remote work. Employees need to be proficient with the available technologies, which allows them to effectively build relationships in a remote work environment.

Global workplace changes, tools and technologies that allow and at the same time facilitate remote work are taking on a new meaning. Computers, which have replaced typewriters with high-tech laptops and smartphones, have become not only everyday objects but also express modern professional flexibility. One gets the impression that digitization in the field of work has become a necessity (Digital Care, 2022a, 2022b). Technical problems, such as Internet problems and other failures, are reported by respondents as barriers to building relationships in remote work. Therefore, the reliability of communication tools plays a key role, and Internet or tool failures can lead to frustration and make it difficult to build trust and a sense of community.

The premise of "Society 5.0" is not only changes in the way people perform their professional duties but also changes in human interaction supported by technology. Online functioning devices are an integral part of human daily life, affecting productivity or well-being. Adaptation to new conditions and interactivity of devices are used to ensure the productivity and well-being of those performing tasks for companies in adapting to different work environments (Krzyścin, Socha Dariusz, 2022; Sekhkowska, 2019; Bukowska, 2022). Frequency of communication, implemented with the use of communication tools, is considered by respondents to be a factor conducive to building relationships while working remotely. These tools allow frequent and easy interactions, which can help maintain and strengthen relationships between employees. The approach to building relationships remotely and the use of communication tools are very important. If employees actively seek to build relationships remotely and make optimal use of communication tools, this can contribute significantly to creating lasting bonds.

As shown in many reports (Confederation of Leviathan, 2023; Nachyna, 2022; Özgüzel et al., 2023; Piecuch, Kibil, 2020; Saad, Jones, 2021) until the introduction of lockdown, remote work was implemented optionally (in IT or international teams) because it was also difficult for employees and managers to adopt. The pandemic period became a turning point for the development of digital tools and technologies, and thus the beginning of the development of a new society that combines the ideas of Society 5.0 with the innovations of Industry 4.0. This makes it possible to function in a reality in which advanced information technologies and industrial automation make it possible to shape a reality that contributes to the quality of life, economic development and sustainability on a global scale (Bradu et al., 2022; Jahanger, Usman, 2023). Remote work appears to pose unique challenges for employees and organizations in terms of relationship building and communication management, while stationary work, despite the burden of higher bureaucracy, can foster interpersonal understanding and collaboration. These findings can serve as a basis for developing strategies to improve communication and relationship building in remote work environments.

The results of the survey highlight the importance of technology, communication and transparency in the process of building relationships in remote working and indicate that administrative and financial aspects can be challenging. At the same time, it is understood that some factors may have a different impact depending on the individual experience and context of remote working. Factors that foster relationship building when working remotely include clarity of communication, availability of appropriate tools, an organizational culture that encourages openness and engagement, and employee skills and attitudes that encourage adaptation and collaboration. For these factors to work, the organization must create an environment that supports and develops them. Factors limiting relationship building when working remotely often relate to both organizational aspects and individual employee challenges. All these obstacles can affect the ability to work effectively in a team, the sense of belonging to the organization and overall job satisfaction.

To overcome these limitations, organizations should invest in better technological infrastructure, training programs to improve employees' technical and language skills, support and mentoring systems, and in developing an organizational culture that promotes openness, trust and collaboration despite the lack of immediacy of face-to-face contact. In addition, it may be important to create transparent procedures and minimize bureaucracy to give employees more autonomy and faster decision-making. Improving communication and creating a sense of community among remote workers can also help to overcome isolation and build lasting, healthy working relationships. Neutral factors may indicate areas that are currently satisfactory or not considered necessary for building relationships when working remotely. However, it is important to note that their neutrality does not mean that they are unimportant; they may simply have less direct impact than other, more important factors. Organizations should continue to monitor these areas to ensure that they are not overlooked or begin to harm employees in the future.

Communication tools in remote working are essential for building organizational relationships. Their effectiveness, reliability and the way employees use them have a direct impact on how these relationships are formed and maintained. To be effective, these tools need to be supported by the right infrastructure, technical skills training and an organizational culture that promotes and supports remote communication.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

FAMILY FIRMS AS AN EXAMPLE OF ONE OF THE OLDEST FORMS OF ENTREPRENEURSHIP

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Purpose: The purpose of the paper is to analyse diverse definitional approaches to family firms emphasising various aspects related to this form of business. Additionally, the underlying idea and specific characteristics of family businesses are presented, including the role played by these businesses in modern Polish economy.
Design/methodology/approach: The theoretical approach adopted is based on an analysis of primary and secondary sources and a review of literature on the subject. The paper uses the desk research method.
Findings: In view of an analysis of the available literature on family firms, it should be noted that, in spite of the efforts made in this regard, a uniform, universally accepted definition of a family business is yet to be formulated. While definitional approaches differ, there is one attribute common to all approaches – the fact that a family firm is managed by members of a single family. Family firms play a key role in creating a stable and sustainable economy, in terms of both employment and their ability to attract investors, which distinguishes them from non-family businesses. The combination of family and business aspects shapes the specific conditions in which these businesses operate, with an emphasis on mutual trust and the long-term perspective of running a business over generations.
Originality/value: The present study contributes valuable insights to the discussion on defining family firms by showing their specific characteristics and emphasising the important role they play in modern economy.
Keywords: family businesses, definition of family firms, family entrepreneurship, characteristics of family firms.
Category of the paper: Literature review.

1. Introduction

Family entrepreneurship is an integral part of economic and social life (Marjański, 2016; Thornton, 2004). Unquestionably, family firms, which are universally the dominant form of enterprise on markets in all countries (Małyszek, 2012), have been one of the most important pillars of global economic progress for decades (Masny-Dawidowicz, 2013; Lipiec, 2011; Więcek-Janka, 2014; Grajzer et al., 2022; Dźwigoł-Barosz, 2018).

Family businesses are the most natural manifestation of entrepreneurship (Kałuża, 2009, p. 59), and at the same time they are the oldest form of business (Masny-Dawidowicz, 2013; Klimek, Klimek, 2020; Marjański, 2016). Marjański states that 'references to them date back to the 3rd millennium BC and their operation is recorded in all cultures and historical periods around the globe' (Marjański, 2016, p. 79).

Family businesses, widely recognised as an important socio-economic phenomenon (Winnicka-Popczyk, 2014), began to attract the attention of academics and researchers in the field of social sciences, management and economic policy only from the mid-1970s onwards (Marjański, 2016, p. 79; Martyniuk, 2018). Since then, the issue of family entrepreneurship as well as the related phenomenon of the family firm have become a popular subject of scientific research (Stradomski, 2013), gaining increasing recognition in academic discussions and literature on the subject (Marjański, 2016).

The topic of family firms and their problems has been addressed by many researchers worldwide and, in recent years, in Poland. In Poland, the first publications on family firms appeared in the early 1990s. Winnicka-Popczyk notes that intensive growth of the number of scientific publications and development of popular science literature on family businesses in Poland did not occur until after 2000 (Winnicka-Popczyk, 2014, p. 208).

The relevant research and publications cover many aspects of operation of family firms and look at them from a variety of perspectives (Leszczewska, 2012; Stawicka, 2010; Stradomski, 2013; Xu et al., 2020; Stutz, Schell, Hack, 2022).

Some of the important issues within the sphere of interest of family businesses include identification of the problems and definitions of a family business, description of the specificity of family businesses, decision-making problems in family businesses (Muñoz-Bullon, Sanchez-Bueno, Suárez-González, 2018; Wróblewska-Kazakin, 2012), change and knowledge management in family businesses (Leitón, Kintana, 2023; Patel, Fiet, 2011), development of family firms – developmental trends of family entrepreneurship (Jeżak, 2016; Winnicka-Popczyk, 2014; Klimek, Klimek, 2020; Martyniuk, 2018; Kraśnicka, Ingram, Bratnicka, 2016) or socio-emotional wealth in family businesses (Temprano-García et al., 2023; Reina, Pla-Barber, Villar, 2022; Hernández-Perlines et al., 2023).

In addition to the aforementioned research areas, a number of authors have touched upon the influence of the family on management of the family business in their publications (Eser, Demirbağ, Yozgat, 2012; Grajzer et al., 2022; Wróblewska-Kazakin, 2012; Masny-Dawidowicz, 2013; Kondzielnik, 2021; Antoszkiewicz, 2012; Bieńkowska, 2016; Domanowska, 2017; Hoffmann, Jaszewska, Zawadka, 2015).

An aspect of family entrepreneurship often addressed in international publications is the identity of a family firm as well as image- and reputation-building in family firms (Babin et al., 2017; Zellweger et al., 2012; Chaudhary et al., 2021; Deferne, Bertschi-Michel, de Groote, 2023; Zellweger, Eddleston, Kellermanns, 2010; Bugiera, Gierczak-Grupińska, Tzoka-Stecka, 2018).

In addition, there is a large body of research and studies pertaining to the topic of building and meaning of family firm brands and brand management in family firms (Rovelli et al., 2022; Schellong et al., 2019; Beck, Prügl, Walter, 2020; Temprano-García et al., 2023).

Among the various aspects of operations of family firms, the literature has shown an interest in understanding the issue of the relationship between the family and the business. The area of research dedicated to family firms and their stakeholders, building stakeholder relationships and the process of communication of the family firm with its environment is also often highlighted by various authors in scientific papers and literature on the subject (Lambrechts, Gnan, 2022; Bargoni, Alon, Ferraris, 2023; Hu, Hughes, Hughes, 2022; Gołaszewska-Kaczan, 2012; Ignatowski, 2014).

The group of publications that is certainly specific to family entrepreneurship is publications on succession in the family firm, i.e. the transfer of power to the younger generation. Currently, the issue of succession and transfer of power and ownership, from the viewpoint of the owner-founder of the family firm and the future successor, is dominant in the literature. Many authors have reflected on the issue of succession (Musialik, Wróblewska-Kazakin, 2012; Kałuża, 2009; Stefańska, 2012; Domanowska, 2017; Widuto, 2021; Malesa, 2015; Strzelecka, 2011; Romanowska, 2018; Brzeziński, 2020; Lewandowska, Andrzejczak, Stradomski, 2017; Martyniec, Rataj, 2013; Masny-Dawidowicz, 2013; Lewandowska, 2009; Mazur-Wierzbicka, 2016).

The growing interest in family businesses on the part of the scientific community allows a better and broader understanding of the specificity of operation and the needs of businesses of this type (Stradomski, 2013, p. 20).

2. The notion of family business

In research on family entrepreneurship, a wide variety of definitions of the family firm have emerged, emphasising different attributes associated with this form of business.

According to Marjański, when researching family businesses, the main methodological challenge is to identify criteria that allow family firms to be unambiguously differentiated from all businesses (Marjański, 2016).

Definition of family businesses in the literature on the subject is contemplated with three major criteria in mind, namely 'ownership, management and succession involving intergenerational transfer of this ownership and management' (Bartczak, 2018, p. 73). As emphasised by Bartczak, aspects pertaining to ownership and management are central to understanding the essence of operation of family firms, and the combination of the two constitutes an important foundation and one of the key characteristics of any family firm (Bartczak, 2018). It is worth noting that in the literature on the subject, the predominant group consists of definitions of a family firm that emphasise both ownership and management elements, both of which are treated as essential criteria in this context (Małyszek, 2012, p. 108; Więcek-Janka, 2013, p. 22).

In the definition of a family firm, particular emphasis is placed on the family itself (Ignatowski, 2014, p. 186). In the most general terms, a family firm is ‘an entity in which a family is involved to some extent’ (Thornton, 2004, p. 9). A family business is assumed to be ‘an entity controlled by members of one family’ (Stradomski, 2013, p. 12). It constitutes ‘a type of business activity in which control and finance belong to members of a specific family’ (Ignatowski, 2014, p. 186). It is most commonly referred to as ‘a business entity in which a family exercises control over ownership and strategic control’ (Sobiecki, Żelazko, 2015, p. 171).

Birely and Rosewell have presented several examples demonstrating the form of family involvement in a family business (Thornton, 2004, p. 9)

1. ‘Two brothers start and run a company together and are therefore co-owners.
2. An entrepreneur founds a company and so their spouse also has shares (according to the principle of community property). The children are teenagers.
3. Two founding families have shares in a publicly traded company and are still managing it.
4. Children of a company founder inherit shares in a business but go on with their own professional careers.
5. A business is run by a professional manager who can, but does not have to, own stock in the company while a family has the majority vote in the management board.
6. Family members of the second and third generation of owners are employed by the company but only the first generation has shares in it’.

Among the leading definitions, the one proposed by Sułkowski stands out. In it, the author noted that ‘a family firm is an enterprise in which at least two family members work. It is also necessary for at least one family member to have a significant influence on management of the company and for the others to have a majority financial stake in the company’ (Ignatowski, 2014, pp. 186-187; Sułkowski, 2011, p. 12; 2012).

According to Sobiecki, a family firm should be defined as ‘an economic entity meeting the criteria of a micro, small or medium-sized enterprise in which the sole or dominant direct owner of the assets is a single- or multi-generational family. At the same time, there is no separation of ownership and management and the family members themselves work in their company. In addition, development of the company is in the interest of the family (the family has a sense of participation in the company, corporate governance arrangements are clear) and the principle of family succession is in place (power and ownership are passed on to the next generation based on social criteria)’ (Bartczak, 2018, p. 72).

According to a definition based on a concept using the Substantial Family Influence (SFI) index, in a family firm there is a clearly distinguishable owner who is also the founder of the business. The owner is not only involved in active management of the company but also owns stock, which gives them control over key strategic decisions (resources) of the enterprise. The dominant owner most frequently serves as the president of the management board or holds a key position on the supervisory board. In addition, at least one other family member is a member of the management or supervisory board (Stradomski, 2013, p. 12).

In contrast, the predominant approach in international literature is the American approach, which defines a family firm as ‘a business of any legal form where all or most of the capital is family-owned, at least one member of the family holds a managerial position and there is an intention to keep the venture in the hands of the family’. (Stawicka, 2010, p. 111).

As Thornton rightly points out, it can be debated whether the term ‘family firm’ should only be used if the family owns a minimum of 50% of the shares. On the other hand, it can be argued that if members of the founder’s family inherit managerial positions, it does not really matter how many shares they own. Another perspective suggests that a family firm is one in which at least two generations in the family hold management positions (Thornton, 2004, p. 10).

Nevertheless, it is worth noting that in each of the definitional approaches presented for a family firm, the common denominator of operation of such an entity is that it is managed by members of a single family (Bartczak, 2018).

That said, despite the efforts made in this regard, to date it has not been possible to formulate a uniform, universally accepted definition of a family business, as highlighted by many authors in their scientific publications (Sułkowski, 2011, 2012; Małyszek, 2012; Gołaszewska-Kaczan, 2012; Kałuża, 2009; Stawicka, 2010; Marjański, 2016; Bartczak, 2018; Thornton, 2004; Domanowska, 2017; Bieńkowska, 2016; Zajkowski, 2021; Jeżak, 2016; Dźwigoł-Barosz, 2018; Kraśnicka, Ingram and Bratnicka, 2016; Ignatowski, 2014; Więcek-Janka, 2013).

According to Zajkowski, the lack of an unambiguous and generally applicable definition typical of family enterprises ‘is a consequence of the extraordinary diversity of family firms in terms of scale and duration of operation, the complexity of organisational structures and the unique attributes of this group of firms that can potentially serve as components of their definitional differentiation’ (Zajkowski, 2021, p. 17).

According to Więcek-Janka, the main problem in developing a clear definition of a family firm is ‘the difficulty of capturing its dual nature properly. This is due to combining spheres where different values and laws apply’ (Więcek-Janka, 2013, p. 20).

Małyszek, on the other hand, insists that the lack of a common definition is a significant obstacle hindering progress in family firm research. Therefore, for further development of the field of family firm management, it is necessary to find a solution to this contested definition problem (Małyszek, 2012, p. 110).

3. Specific characteristics of family firms

Family firms have a number of distinct characteristics typical of family entities, which allows them to be recognised in comparison with other organisational forms (Romanowska, 2018). This section will focus on discussing these characteristics. The area of research dedicated to analysing the unique characteristics of family firms is often presented by various authors in academic research and literature on the subject (Bartczak, 2018; Leszczewska, 2012; Stradomski, 2013; Ignatowski, 2014; Hoffmann, Jaszewska, Zawadka, 2015; Kałuża, 2009; Więcek-Janka, 2012; Domanowska, 2017; Lipiec, 2011; Gołaszewska-Kaczan, 2012; Hernández-Perlines et al., 2023; Kraśnicka, Ingram, Bratnicka, 2016; Jeżak, 2016; Dźwigoł-Barosz, 2018).

A family firm is characterised by interactions at three levels – within the family itself, in the area of managing the business and in the ownership structure of the company (Lipiec, 2011, p. 34).

The main feature of a family business is the interdependence between the business and the family (Leszczewska, 2012, p. 91; Bartczak, 2018), where ownership and management functions are integrated in the hands of the family, resulting in a dominant participation in decision-making processes (Bartczak, 2018, p. 75).

As mentioned by Więcek-Janka, family businesses are differentiated from non-family businesses by 'the interference of goals of the family and the business that are common in certain respects but may also differ' (Więcek-Janka, 2012, p. 61). In their paper, Hernández-Perlines et al. also emphasise that family firms pursue a combination of business and family goals that tend to overlap (Hernández-Perlines et al., 2023).

Family firms are characterised by a 'long-term business strategy and enduring ties to the local community, loyalty to employees and customers' (Grajzer et al., 2022, p. 7).

A characteristic common feature of family firms is 'forward thinking about their own future in terms of the family's future' (Kałuża, 2009, p. 52).

Such firms are marked by 'resourcefulness and survivability, which become an emanation of the values and passions of entire generations, a life insurance policy for families and an example of social sensitivity' (Hoffmann, Jaszewska, Zawadka, 2015, p. 8).

Domanowska has made an observation that it is important for family firms not only to seek to maximise profit and maintain continuity but also to focus on quality, especially where quality is often associated with their own name (Domanowska, 2017, p. 21).

Gołaszewska-Kaczan emphasises that family firms are distinguished by their ability to make decisions quickly and their greater willingness to undertake bold and risky ventures. In addition, family businesses show a better ability to adapt quickly to new market needs and are characterised by more efficient and effective communication between management members (Gołaszewska-Kaczan, 2012, p. 144).

Other characteristics typical of family entities, among those mentioned in the literature on the subject, include ‘longevity, prudent financial policy, focus on long-term outcomes of operation, stability, maintaining cultural traditions, acting for the benefit of the local community and greater resilience to economic crises’ (Kraśnicka, Ingram, Bratnicka, 2016, p. 286).

Ignatowski notes that in their concern for traditions, families not only wish to maintain their heritage in the economic sphere and in management strategy but they also care about continuation of values in the moral sphere. In the spirit of these values, they seek to keep control of the business within the family, avoiding the involvement of those outside the immediate circle in making decisions concerning development of the company (Ignatowski, 2014, p. 187).

Stradomski’s publication emphasises that family firms are characterised by the family’s economic dependence on the business and active involvement of many family members in business operations, and accentuates the important role of reputation of the business. The link between the reputation of the company and that of the family, concern for the well-being of employees and a deep sense of social responsibility are further characteristics typical of family firms (Stradomski, 2013, pp. 12-13). In addition, Stradomski has also observed business conservatism characteristic of family firms, which means an industry focus on the so-called core business, operating on the domestic market and making use of proven production methods (Stradomski, 2013, p. 17).

The organisational structure in a family firm is based on family values, with an emphasis on building employees’ trust and loyalty. Integration of the entrepreneurial sphere with family life makes the company the centre of family life, supporting career development and satisfying basic material needs of family members. A special emotional bond with stakeholders, care for customers, suppliers and employees, treated as a key source of competitive advantage, and financing the business mainly with the family’s own capital are other fundamental characteristics of a family firm (Bartczak, 2018, pp. 75-76; Dźwigoł-Barosz, 2018, pp. 36-37).

Family firms are notable for their value system based on standards and rules of conduct in each area of the business (Leszczewska, 2012; Bartczak, 2018). It includes loyalty and commitment of family members. Of import is the transfer of family traditions and values to subsequent generations while maintaining a conservative approach to the management and production techniques used. Self-belief and perseverance in the pursuit of goals are also important elements of the value system guiding a family business (Leszczewska, 2012, p. 93; Bartczak, 2018, p. 76). As underlined by Dźwigoł-Barosz, this is to ensure that the main goal of the family firm, namely ‘to survive on the market and develop as a whole and to stand up to competition’ (Dźwigoł-Barosz, 2018, p. 37), is achieved. In their study, Zellweger et al. showed that the image of a family firm positively influences its performance. The authors demonstrated that when building a family firm image, the family’s unique influence on the company can be leveraged to create a competitive advantage for the firm (Zellweger et al., 2012).

4. The role of family businesses in modern economy

Family firms are not losing their significance in today's economic reality. Academic research indicates that the share of family firms in both small and medium-sized enterprises (SMEs) and in large enterprises remains substantial (Kraśnicka, Ingram, Bratnicka, 2016, p. 286). Therefore, nowadays, family firms not only play a key role in the global economy, and within the European Union, but are also becoming an increasingly important part of the Polish economy (Romanowska, 2018; Kałuża, 2009; Kraśnicka, Ingram, Bratnicka, 2016).

The role of family entrepreneurship becomes relevant for a number of reasons, particularly, as Marjański and Więcek-Janka have observed, because of how the issues of business operation are blended with the life of the family that runs the business. It is the coexistence of the two perspectives, business and social, that makes this topic crucial (Marjański, 2016; Więcek-Janka, 2012). The combination of family and business aspects results in family members sharing work and ownership (Gołaszewska-Kaczan, 2012), which creates specific conditions in the operation of the enterprise, including 'mutual trust, a long-term perspective of carrying on the business over generations, greater concern for employees and a specific form of relationship with customers' (Marjański, 2016, p. 79).

Family firms make a major contribution to wealth creation and competitiveness (Babin et al., 2017), are a source of economic growth and contribute considerably to creating new jobs (Romanowska, 2018; Klimek, Klimek, 2020), while at the same time they give much attention to regional and local conditions (Klimek, Klimek, 2020, p. 11; Stawicka, 2010).

In addition, Bartczak has underlined that, owing to their operation on the market, 'it becomes possible to employ many people, generate considerable revenue for government budget from taxes and other public and legal dues, intensify innovative activities and extend the scope of implementation of new technologies as well as expand the product and service offer available on local markets' (Bartczak, 2018, p. 71).

Winnicka-Popczyk points out that the essence of family entrepreneurship is determined not only by its size but also by qualitative aspects of how this phenomenon functions. She highlights the important socio-economic role played by family firms in the modern Polish economy (Winnicka-Popczyk, 2014, p. 209).

In the social context, emphasis has been placed on the role of the family as a platform for entrepreneurial behaviours. In addition, a strong desire for social value and environmental commitment of family firms have been stressed (Winnicka-Popczyk, 2014, pp. 209-210).

From an economic point of view, in addition to the typical functions of small and medium-sized enterprises, family firms play an important role in stabilising the economy at least in two dimensions – in the area of employment (they show a lower propensity to lay off employees, even in crisis situations) and in the area of finance (they are perceived by potential investors as a more secure target of capital investment than non-family businesses) (Winnicka-Popczyk, 2014, pp. 209-210).

Family firms tend to invest in themselves, with a view to sustainably maintaining and multiplying wealth for future generations. They tend to favour long-term investments over the short-term strategy of making immediate profit. In this way, Leszczewska concludes, family firms play a key role in stabilising the economy (Leszczewska, 2012, p. 92).

5. Summary

Research on family entrepreneurship reveals its fundamental role in societies and in shaping stable economies over the centuries. Family firms dominating global markets are the foundation of economic development. Family businesses are characterised by specific features such as combining business and family interests, a long-term strategy, loyalty to employees and customers, a focus on long-term outcomes of operation or the ability to adapt quickly to new market needs (Kraśnicka, Ingram, Bratnicka, 2016; Leszczewska, 2012; Bartczak, 2018; Gołaszewska-Kaczan, 2012).

Regardless of the growing academic interest, an unambiguous definition of family firms is lacking, as noted by many researchers (Sułkowski, 2011; Małyszek, 2012; Więcek-Janka, 2013; Zajkowski, 2021; Ignatowski, 2014). Zajkowski argues that the difficulty in formulating a uniform, universally accepted definition of a family firm is due to the great diversity of family firms in terms of scale, duration of operation and organisational structure (Zajkowski, 2021). Więcek-Janka adds that the main problem is the difficulty of taking into account the dual nature of family firms connected with combining different values and rights (Więcek-Janka, 2013). Małyszek, on the other hand, points out that the lack of a common definition is becoming a significant obstacle in research on these firms, and that finding a solution to the definition problem is crucial for further development of the field (Małyszek, 2012). While definitional approaches differ, there is one attribute common to all approaches – the fact that a family firm is managed by members of a single family.

Notwithstanding the demand for it, Poland still does not have a clear definition of a family firm. Given the key role played by family firms in the EU and global economy, according to Klimek and Klimek it is necessary to 'introduce appropriate legislation that would both recognise the family firm as a separate economic unit and be helpful in solving the problems faced by family firms' (Klimek, Klimek, 2020, p. 11). The Family Firm Initiative Association has emphasised the necessity of rooting these firms in Poland by creating modern legal instruments to enable business development in spite of generational changes (Klimek, Klimek, 2020, p. 21). Therefore, as underlined by Winnicka-Popczyk, it is important for Poland to benefit from the experience of Western countries and introduce an effective support system for this sector (Winnicka-Popczyk, 2014, p. 210). This positive approach can foster the development and stability of family businesses, which is important in the context of the global economy. Thus, devising an unambiguous definition of a Polish family firm and effective legal instruments is a key step in building a sustainable foundation for the development of these businesses in the country.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

SELECTED ASPECTS OF EXHIBITORS' MARKETING ON THE EXAMPLE OF BIOEXPO WARSAW

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Purpose: The main purpose of the survey was to provide assessment of selected marketing instruments used by exhibitors during a chosen trade event
Design/methodology/approach: The survey was conducted during a trade event by the observation method and interviews with suppliers in the years 2021-2023. Secondary data was obtained from reports and domestic and foreign publications, among others, those registered in the Web of Science and Scopus Base.
Findings: Promotions were found to be the weakest marketing instrument, whereas physical evidence was found to be the best prepared.
Research limitations/implications: Relatively few scientific papers in the field of trade events were identified.
Practical implications: The results can be used by producers as an indication for optimization of marketing activities. In the overall assessment promotion had the worst score as compared to other marketing instruments. The above result was largely affected by the score of supplemental promotion activities. It seems that at the relatively new market, ecological products especially: samples, tasting, or demonstrations are very important as they allow to get familiar with the products and break the barrier of distrust.
Social implications: Effective marketing activity of exhibitors contributes to the promotion and increase of social awareness in relation to organic food. On average, more than 3000 visitors educated themselves in this area during each day of the fair.
Originality/value: Lack of studies on trade events in reference to bio industry.
Keywords: Organic food, trade event, exhibitors, marketing, marketing-mix.
Category of the paper: Research paper.

1. Introduction

Poland is currently the largest trade market in Central and Eastern Europe. It occupies the 11-th position among European countries and 18-th position in the world (according to the criterion of exhibition area) (World Map of Exhibition…, 2022).

In Poland, trade events have a very long history. One of the first events of this type which started the era of modern trade events in our country was the Agricultural-Industrial Exhibition in Warsaw which was held in 1821, in the Kingdom of Poland. Trade Fairs for certified ecological products have a shorter, thirty year long, history.

Although there are Polish (Gębarowski, 2010, 2018, 2019; Szromnik, 2012; Bazarnik, Mańczak, 2014; Knurek, 2023) and foreign publications that address the subject of fairs and exhibitors (Blytke, 2010; Miceulic, Paunovic, Prebezac, 2012; Torun, Çelik, Bobat, 2012; Santos, da Silva, 2013; Kaladsky, Gress, 2014; Szekely et al., 2018; De la Calleja, Mora, Zamitiz, 2020; Gaudamuz-Villalobos, Valerio, 2020; Quemin, 2020; Sproule, 2020; Lazzaro, Moureau, 2021; Ibbara et al., 2021; Li, Chen, 2022; Park, Lee, Kim, Rojik et al., 2022; Zhou, Zhao, 2023), studies on assessment of bio industry trade events can hardly be found. This article fills the gap in this area. In addition, most of the above publications are devoted to research on the importance of trade fairs for exhibitors, visitors, regions, countries or technical innovations in the arrangement of exhibition stands. A few are related to marketing evaluation.

The study goal is to provide assessment of selected marketing instruments used by exhibitors during Bioexpo Fair. The following research hypothesis was adopted in the research: the marketing instruments used by the majority of the evaluated exhibitors are at least at a good level.

2. Materials and methods

The research consisted of several steps. The first step involved defining the of concept of fair, its genesis and function (including marketing functions). Next, the position of Poland as a trade center was determined in comparison with other European countries. In the next stage bioexpo fair was presented as compared to domestic and foreign events. The basic statistic parameters, i.e. the number of exhibitors and visitors, the size of exhibition area were used. In this step reports and publications from domestic and foreign databases were analyzed including Web of Science and Scopus.

The successive step involved choosing a trade event to be used for the study. The selection criteria included a location, the fair profile and the number of editions. BioExpo Fair was used in the research. This research is a continuation of earlier studies performed for BioFach fair in Nuremberg and Natura in Łódź (Koreleska, 2014, 2016). The research was conducted in 2021-23, on a sample of 106 manufacturers (having a stand at BioExpo Warsaw), by the method of observation with the use of an observation sheet as a measuring instrument, and non-standardized interviews. The assessment included selected marketing instruments, i.e. physical evidence, promotion, people and innovations. These instruments can be found in different modern marketing concepts, i.e. RAPP, 7P, 5P. The choice of the above-mentioned tools was made taking into account factors such as the duration of the trade fair event and their importance for establishing new business relationships.

3. Notion of Fair and its Marketing Importance

The concept of fair has several definitions. Until the 90s of the previous century, definitions had been focused on its trading function. A fair was defined as 'a place of regular trade meetings' organized always in the same place, in fixed time intervals and with limited duration time. Its task was to provide the participants with the opportunity to present their offers in order to conclude trade transactions (Encyclopedia of Management) or organize 'a domestic or foreign exhibition enabling a review of exhibits from different production fields making it possible to enter into trade transaction' (Dictionary of Polish Language, 1983).

No sooner than in the last decade of XX century, attention was focused on the informative-promotion function of trade fairs which found reflection in newer definitions of this concept. In such an approach, a fair is referred to as 'specific form of promotion and specific form of personal sale supported by all best things of the company promotion mix' (Drab, 1995) or 'a fair is an organized form of presentation of product designs by different economic subjects to trigger trade activities'. They are organized in a precisely defined period and a place where visiting persons are subject to (customers and visitors) by a wide range of marketing communication tools" (Gębarowski, 2010).

4. Characteristics of BioExpo Fair in Comparison with Other Trade Events

The analyses indicate that for the last 10 years the worst year for the exhibition industry was 2021 (tab. 1). According to the report of the Polish Trade Industry Chamber, the number of trade events, exhibitors, visitors and the overall exhibition area was the lowest in that year (Kozyra, 2023).

However, it needs to be noted that as early as from 2017, the number of exhibitors had been systematically decreasing. The fall of the number of exhibitors can be explained by too high participation costs, e.g. psychological aging of some trade events (Szromnik, 2012; Bazarnik, Mańczak, 2014) as well as Pandemic Covid-19 and fast development of modern remote technologies enabling more and more easy contact of exhibitors with customers.

Current prognoses are optimistic for the branch, and indicate that the Polish trading industry is predicted to come to the level of 2019 until 2024, and some events even until 2023.

Table 1.
Trade events in Poland in 2012-2022

Specification	Years									
	2012	2013	2014	2015	2016	2017	2018	2019	2021	2022
Number of fairs	221	216	214	200	211	193	201	189	73	123
Exhibition area (in thousands km)	742	682	818	765	838	785	871	761	396	540
Number of exhibitors	27810	27828	28392	28896	26381	26645	27381	25598	6786	13973
Number of international exhibitors	4461	4380	4790	4674	4753	5853	6240	5339	1508	2750
Number of visitors (in thousands))	1162	1249	1378	1436	1539	1503	1621	1581	436	894

Source: Kozyra, 2023.

International Fair of Food and Organic Products – BioExpo Warsaw organized in Nadrzyń (the facility with the largest exhibition area in Poland and Central and Eastern Europe) belong to the most important trade events of organic products (Ptak Warsaw Expo…, 2020). It is a new initiative, and the first edition took place 5 years ago. Despite the problems caused, among others, by the pandemic, it survived that difficult time.

Its scale, however, is much smaller as compared to the International Fair of Production, Processing and Distribution of Ecological Products Biofach in Nuremberg. According to data from 2023, it hosted 12 times fewer exhibitors, and 3.7 times fewer visitors. There were 20 times fewer foreign visitors.

The number of visitors was, however, quite impressive. Most of them came from the following ten countries: Italy, Austria, Holland, Spain, France, Poland, Switzerland, Czech, Great Britain and Turkey. The visitors were mainly citizens of the European Union countries UE (64%) and European from outside the EU (16%), Asia, Australia, Oceania (9%), the USA (8%) and Africa (3%).

It should be noted that organizers of the eco-fairs sought to provide the participants with a platform for exchange of additional information. For this purpose, e.g. scientific congress was organized where as many as 120 lectures were given for 8487 listeners. As part of BioExpo Fair there was a congress of organic products with lectures given by experts, discussion panels, workshops and presentation of the sector related companies. In total, 19 trade events were planned.

Table 2.
Characteristics of Bioexpo and Biofach Fairs

Specification	Name of fair	
	Bioexpo	Biofach
Number of exhibitors	206	2574
Number of foreign countries	7	137
Number of visitors	9724	35991
Number of foreign visitors	7%	47%
Number of editions	5	34
Duration time (days)	3	4

Source: Veranstaltunganalyse, 2023.

The survey research which was conducted with exhibitors during the Biofach Fair confirmed that the great majority of the respondents had a possibility to meet with the target group. 90% of exhibitors declared having made new business contacts and 80% hoped to turn them into a long term cooperation.

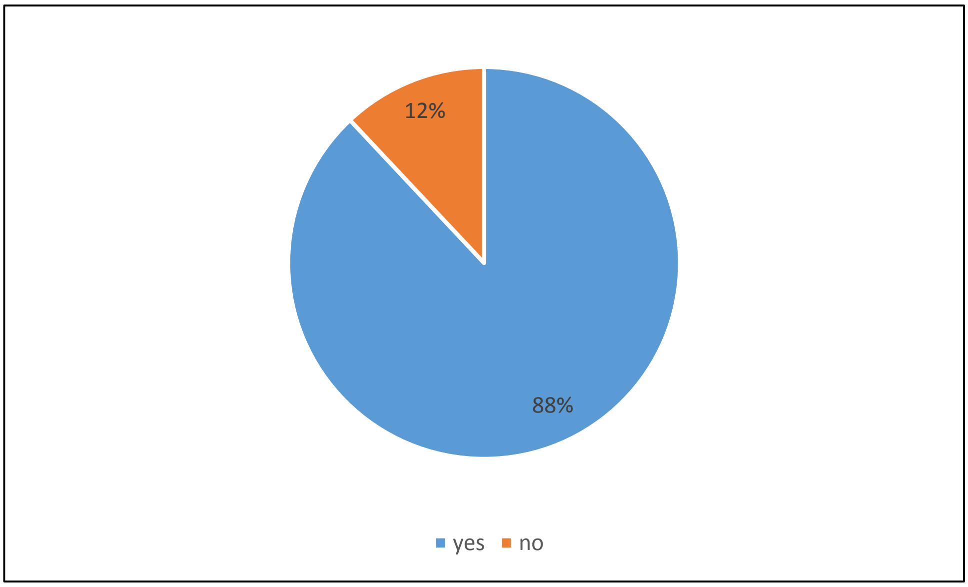

Figure 1. Assessment of the opportunity of contact with the target group during the Biofach Fair in the opinion of the exhibitors.

Source: Veranstaltunganalyse, 2023.

The survey results show that in comparison with the visitors the exhibitors are more skeptical about further development of eco-industry. Similar voices appeared at the BIOEXPO Warsaw fair. Such an approach may be caused by the following factors: inflation, global trade disruptions due to political factors, or general economic slowdown likely to turn into a recession (Piątek, 2023).

Table 3.
Assessment of eco industry economic situation in the opinion of exhibitors and visitors

Specification	Name of Fair	
	Exhibitors	Visistors
Rapid increase	9	15
Slight increase	27	36
No change	25	27
Slight decrease	23	17
Rapid decrease	6	5
No answer	10	-

Source: Veranstaltunganalyse, 2023.

5. Results

The first marketing instrument to be studied were people understood as workers in 7P model. ‘People employed in a company are often said to be the most important marketing instrument as they remain in direct contact with the customers (…) and create the company image (positive or negative)’ (Lexicon of Marketing, 1998).

In relation to people representing organizations and enterprises at the Bioexpo fair, a special focus was put on the method and quickness of sharing information about the company and the assortment offer, staff competences, responsiveness, politeness toward customers, atmosphere at the fair stand etc.

The survey shows that the great majority of respondents received a very good score. Every tenth exhibitor had a good score. This results indicate good preparation of the staff members, the level of their knowledge and good competences. Moreover, the exhibitors were kind, smiling and cultured. There was a good atmosphere at the fair stands. The only thing that was found to be a little disturbing was absence of the personnel of some stands. This is a situation that must be avoided. Chart 2 demonstrates a detailed assessment of this marketing tool.

It should be noted that similar results were obtained in the study of previous exhibitors at the BioFach trade fair in Germany. Although the competence of the staff and the interaction between the staff and the visitors were at the highest level, the number of staff was assessed slightly worse (Koreleska, 2014).

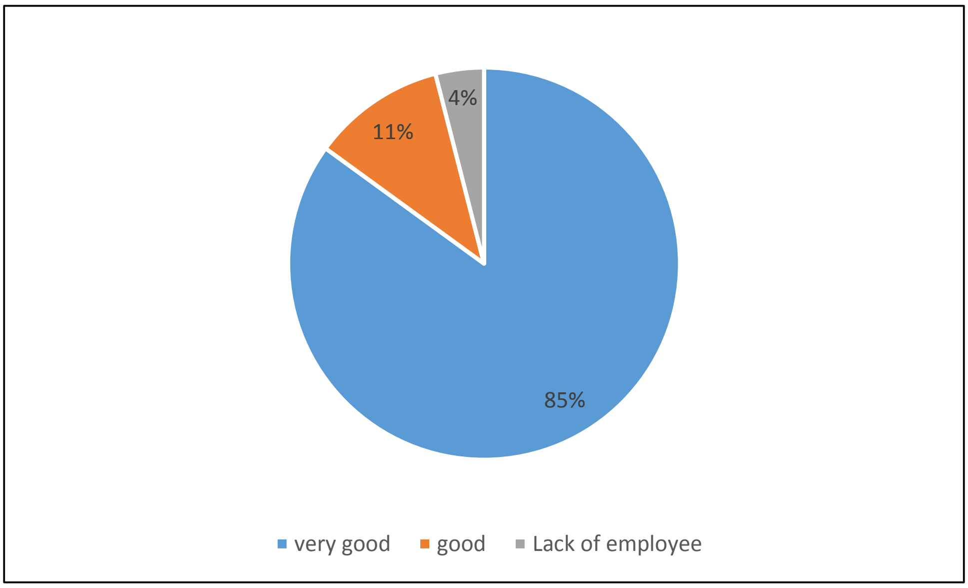

Figure 2. Assessment of marketing instrument referred to as ‘people’ used by exhibitors on a 5-point scale, where 5 – very good, 4 – good, 3 – average, 2 – bad, 1 – very bad.

Source: own research.

Another marketing tool that was subject to assessment was physical evidence. This component of the marketing mixture covers all the physical elements which are seen by customers while visiting a fair stand. This is a particularly important marketing instrument to be used during a trade event as it consciously or sometimes subconsciously affects customers by focusing their attention to the exhibitors and their offers. The survey research was supposed to evaluate attractiveness of the stand arrangement (display and equipment), outfits of the stand attendants, logo, etc. According to an analysis of the results the exhibitors were very well prepared in this field (figure 3). The arrangement of the stand received a similarly high rating in previous studies (Koreleska, 2014).

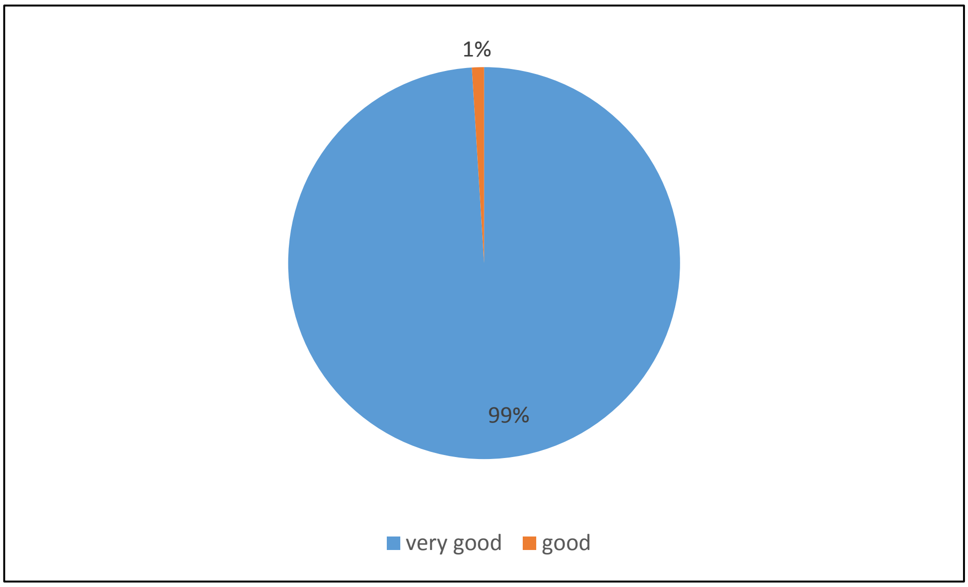

Figure 3. Assessment of marketing instrument referred to as 'physical evidence' used by exhibitors on a 5-point scale, where 5 – very good, 4 – good, 3 – average, 2 – bad, 1 – very bad.

Source: Own research.

The next marketing instrument to be assessed was promotion including: advertisement, supplemental promotion and personal sales. In the overall assessment promotion had the worst score as compared to other marketing instruments. The above result was largely affected by the score of supplemental promotion activities. It seems that at the relatively new market, ecological products especially: samples, tasting, or demonstrations are very important as they allow to get familiar with the products and break the barrier of distrust.

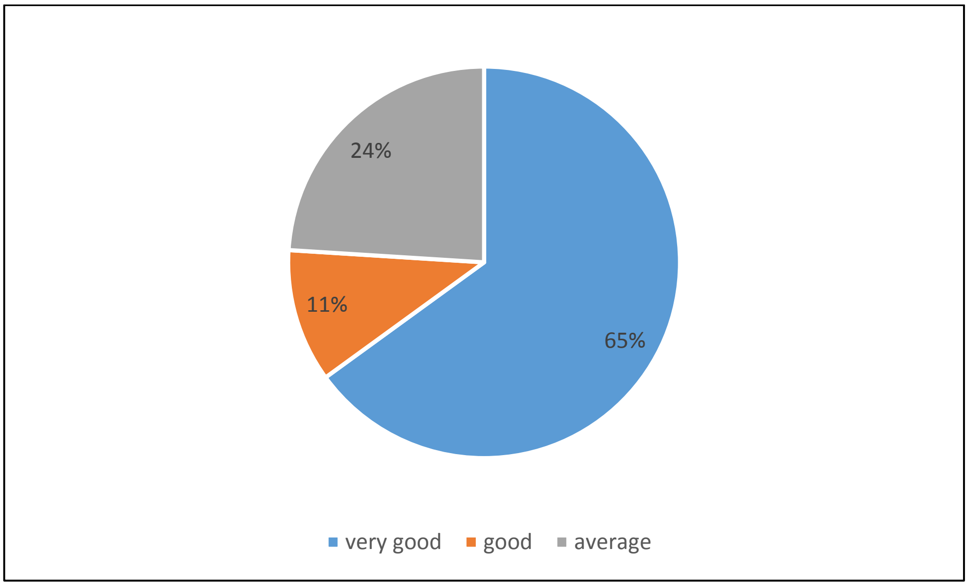

Figure 4. Assessment of marketing instrument referred to as 'promotion' used by exhibitors on a 5-point scale, where 5 – very good, 4 – good, 3 – average, 2 – bad, 1 – very bad.

Source: Own research.

To sum up, it should be noted that all marketing instruments used by the majority of the evaluated exhibitors were implemented at least at a good level, which confirms the adopted research hypothesis.

6. Summary

The research results show that the level of exhibitors' preparation for the trade events was very high, which confirms the adopted research hypothesis. Physical evidence was found to be best marketing instrument, whereas the weakest one was promotion which should be improved. The above result was largely affected by the score of supplemental promotion activities. It seems that at the relatively new market, ecological products especially: samples, tasting, or demonstrations are very important as they allow to get familiar with the products and break the barrier of distrust.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

POLICE MEDIA RELATIONS ACTIVITIES IN THE LIGHT OF EMPIRICAL RESEARCH. COMPARATIVE ANALYSIS

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Purpose: In order to establish the applicable principles for the practical implementation of police media relations activities, a survey was conducted among all press officers of the Silesian garrison in 2022. The results obtained were then compared with the results of a project carried out on the same research field in 2017. The result was to identify trends in the management of police information policy and to obtain data on the selection and use of communication tools.
Design/methodology/approach: A survey questionnaire was addressed to all press officers of the Silesian police garrison. The questions concerned, among other things, the tools used in media relations activities, perceptions of the communicative effectiveness of individual mass media or the methods preferred by journalists for obtaining information. In order to determine the nature of transformations in media relations activities, the results obtained were compared with data obtained during a similar survey, but carried out five years earlier.
Conclusion: An overwhelming proportion of officers responsible for maintaining relations with the media continued to declare traditional forms of contact such as a telephone call (52 per cent of indications), which is probably related to the high attractiveness for journalists of information held by the police press service. In contrast, awareness of the importance of social media has increased among officers (from 22 per cent to 30 per cent), although this has not been followed by an increase in the level of their use in media relations practice. There has also been a drastic increase in the level of approval (from 53 per cent to 75 per cent) of the use of rectification as an effective method of responding to publications containing inaccuracies, misrepresentations or manipulations.
Practical implications: The results obtained are of implementation significance due to the possibility of applying in practice the public relations activities of both the uniformed services and other organisations implementing communication strategies based on the use of mass media, and this particularly concerns media relations activities.
Originality/value: Conducting research into the management of police communication allows for scientific reflection on methods of information distribution and at the same time creating the image of both the formation itself and forming opinions about the level of security among media audiences. The analyses described above also allow further areas of research to be identified and actions to be taken to implement innovative methods of improving the process of social communication of the police and other uniformed services.
Keywords: media relations, press officer, police information policy, communication tools, press officer survey

1. Introduction. Managing the information policy of the Polish police

The basis of the management system of the information policy of the Polish police is constituted by the press officers of district and city police headquarters. The manner, scope and form of the implementation of press and information activities in the police are defined by Order No. 1204 of the Police Chief Commandant of 12 November 2007, supplemented by Decision No. 220 of 2010, and amended by Order No. 41 of 6 October 2014 and Order No. 12 of 27 January 2018. The Police Chief's Notice of 3 September 2018 contained the consolidated text of the Order prior to the amendment introduced by Order No. 3 of 26 January 2023. Prior to that, Order No. 13 of the Police Chief Commandant of 25 September 2000 was in force, and the first act normalizing the 'media' aspect of police functioning was Order No. 11 of the Police Chief Commandant of 16 August 1995.

Pursuant to the regulations in force since 2023, press and information activities are carried out within the scope of their jurisdiction by the Commander-in-Chief of the Police, the Commander of the Central Bureau of Investigation of the Police, the Commander of the Bureau of Internal Affairs of the Police, the Commander of the Central Bureau for Combating Cybercrime, provincial police commanders, the Commander of the Capital City Police and district commanders (city, district). On behalf of the above-mentioned commanders there are press officers employed on separate posts, and on behalf of the district commanders there are press officers who may also perform other official duties.

Press officers are to inform journalists about the activities of the municipal or district commanders to whom they report and the units they manage. In the case of regional media, in consultation with the press officer of the territorially competent provincial headquarters, they prepare and transmit to journalists press releases, multimedia materials (management specifies: photographic, film and audio) and disseminate them on police websites,

Pursuant to the quoted regulations, press officers respond to questions raised, react to press criticism, provide support in transmitting information to the mass media by other organisational units, participate in shaping information policy related to solving problems of social pathologies, criminogenic phenomena, as well as preventive measures. For the proper performance of their tasks, they are obliged to participate in training courses that teach them how to interact with the mass media.

In carrying out media relations projects, they maintain constant contact with journalists from sub-local, local and regional media, and incidentally also with national or international media. The group of recipients of the messages created by these officers and those who interact with them also includes administrators or users of content media distributed to Internet users or so-called citizen journalists. For the media environment, press officers are the main keepers of news about events or phenomena related to the functioning of the police, as well as a source of knowledge allowing verification of the accuracy of rumours concerning this sphere obtained by journalists from other informants. In 2017 and 2022, the described project covered research areas that had not been previously analyzed among police officers in Upper Silesia.

2. Methodology. A study of the communication activity of press officers

In a research project addressed to press officers of police headquarters in the Silesian Voivodship, activities relevant for planning, organising, coordinating, implementing and evaluating the effectiveness of the process of communication through the mass media were verified. The aim was to determine the forms of media relations activity preferred by press officers and regarded as the most ergonomic and effective.

The survey of press officers' media relations activities conducted from 25 August to 14 September 2022 involved 100 per cent of the assumed respondents, i.e. officers entitled to participate in the police information policy. The research field was the Silesian police garrison, which in autumn 2022 consisted of 19 city commands and 13 district commands located in the following towns and cities of the Silesian Voivodeship: Będzin, Bielsko-Biała, Bieruń, Bytom, Chorzów, Cieszyn, Częstochowa, Dąbrowa Górnicza, Gliwice, Jastrzębie Zdrój, Jaworzno, Katowice, Kłobuck, Lubliniec, Mikołów, Mysłowice, Myszków, Piekary Śląskie, Pszczyna, Racibórz, Ruda Śląska, Rybnik, Siemianowice Śląskie, Sosnowiec, Świętochłowice, Tarnowskie Góry, Tychy, Wodzisław Śląski, Zabrze, Zawiercie, Żory and Żywiec.

Respondents were asked to identify the methods of distributing content to journalists and, in particular, to indicate the communication tools used, the predominant ways of contacting mass media employees or the principles of maintaining a feedback relationship, both in technological and functional terms. Given that the respondents' constant professional contact with the media environment shapes their opinions on the mass media, another aspect to be analysed was the officers' perceptions of the effectiveness of particular news dissemination media in the sphere of social communication.

Daily service allowed the participants of the research project to obtain data on the specifics of the journalistic community by its size, typology of media, level of professional specialisation of journalists, assessment of professional preparation for reporting on the described events and phenomena. Frequent contacts with employees (or co-workers) of editorial offices in individual cities or districts and verification of the content of media messages also influenced the formation of an opinion on the social prestige of the journalistic profession. Therefore, determining the level of reputation that respondents believe journalists enjoy was also the subject of the analyses conducted.

Press officers in the 32 units forming the Silesian garrison located in the southern part of Poland received a survey questionnaire by e-mail. After typing in their answers to the questions, the respondents returned the questionnaire to the e-mail address provided. The questionnaires were filled in by all police officers who performed press officer duties in the Silesian Voivodship during the study. The course and conclusions of the research project are presented in detail in the article "Managing Social Communication. Analysis of Media Relations Activities of Polish Police Press Officers" published in Management Systems in Production Engineering, vol. 31, no. 3 of 2023.

In order to grasp the directions of transformations in media relations activities, the results obtained were compared with data obtained during a similar survey, but carried out five years earlier. In the Silesian garrison of the police, a survey of the techniques and tools of information distribution most frequently used by press officers was conducted from 10 October to 15 November 2017. Ninety-four per cent of press officers involved in maintaining contact with the mass media took part. The results of the survey are described in the article 'Organisation and scope of media relations activities of press officers of police units', published in 'Studia Politicae Universitatis Silesiensis' No. 22 of 2018. The juxtaposition of the effects of the two programmes made it possible not only to document the actual state of affairs at the time of the analyses, but also to reveal trends of change in the activity of police media relations specialists.

The weakness of the research tool was the possibility of insight or interference by the superiors of the surveyed police officers in the answers provided. This is due to the specificity of organizations with a hierarchical structure.

3. Results of the research project

The most popular communication tool used by press officers to contact journalists in 2022 was the traditional telephone call (52 per cent). The next most popular methods of communicating a message to a specific addressee were email correspondence (9 per cent), sending text or multimedia messages (5 per cent), and holding face-to-face meetings (4 per cent). None of the respondents indicated remote meetings or content disseminated on social media as a form of contact with media professionals. Among the ways of making information available to all interested parties, on the other hand, publishing data on the official website of the police headquarters was popular (28 per cent). At the same time, according to respondents, the mass media belonging to online broadcasters (33 per cent of indications) and social media (30 per cent of indications) are the most effective in providing information to residents. Television and radio were, in the opinion of press officers, of much lesser importance (15 per cent each), and the printed press played only a complementary role (6 per cent).

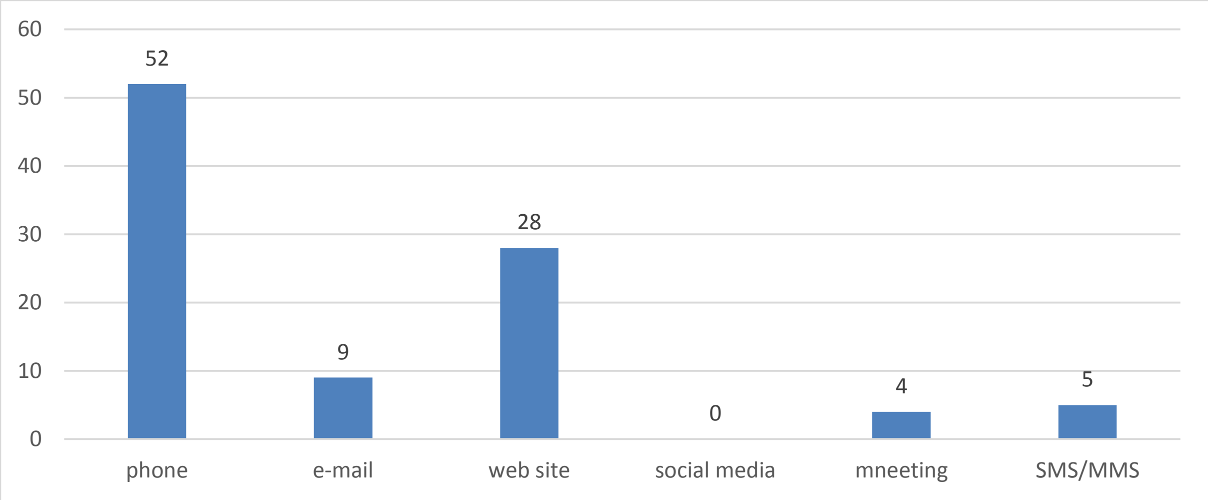

Figure 1. Ways of communicating information to journalists preferred by press officers in 2022. Shot in percentage terms.

When choosing the form of news communication preferred by journalists, according to police officers, press officers in 2022 unequivocally indicated individual contact (83 per cent) whether through traditional means of communication, email, internet communication or a meeting. None of the respondents mentioned group contact, e.g. during a briefing or press conference, as a formula enjoying a higher level of approval among journalists. However, one in ten police officers surveyed did not have an articulated view on this topic in 2022.

When asked to specify the size of the journalistic community with which they maintain regular contact, respondents most often cited a number between 5 and 10 reporters (47 per cent, indications). A relatively small circle (up to 5 people) of interested media representatives was declared by 36 per cent of respondents, with the remainder (17 per cent) reporting that they work with a group of more than 10 journalists on a regular basis.

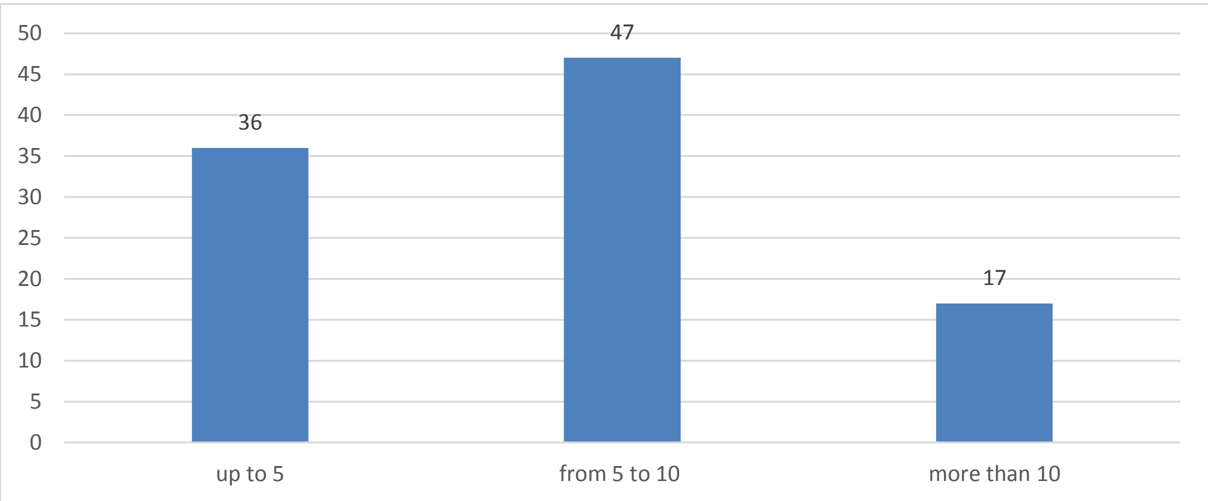

Figure 2. 2022 press officers' declarations on the number of journalists with whom they have regular news coverage. Shot in percentage terms.

The press officers were also asked to attempt to verify reporters' expertise in the activities of the law enforcement apparatus, the procedures used or the applicable legislation governing the police. The journalistic community with which the press officers maintained communication relations was, in their opinion, dominated by casual employees or associates of specific editorial offices (38 per cent of indications). They perform journalistic tasks reporting on police work on the same basis as they prepare other press materials. The second most numerous group are journalists with a reputation among police officers as specialised investigative or police reporters (32 per cent of indications). The remaining press officers (30 per cent) did not feel competent to categorise the level of specialisation of the journalists with whom they worked. However, it was most often pointed out that, taking into account the typology of the mass media, in terms of the type of individual media, the best prepared in terms of content (in terms of knowledge and experience of police operations) were representatives of television (41 per cent), followed by the press (27 per cent) and radio (24 per cent). The lowest level of this type of qualification was observed by press officers in the group of representatives of internet broadcasters (8 per cent).

Press officers were further asked about their preferred tools for responding to inaccurate, untrue or misrepresented news published in the media. As many as 75 per cent of respondents cited getting a correction published as the appropriate form of action to be taken by a media relations professional.

In contrast, an analysis of police officers' perceptions of the prestige of the journalistic profession found that the majority (61 per cent) of respondents considered it to be average. Among the remaining officers, respondents identifying the level of authority of the profession as high (27 per cent) predominated. Low public esteem was indicated by the smallest group of respondents (11 per cent).

4. Discussion. Breakdown of results by specific police unit

The research project involved officers from district police headquarters (KPP - County Police Headquarters) and city police headquarters (KMP - City Police Headquarters), Their working conditions are differentiated, among other things, by the nature of the area served. In the case of the first units (KPP), these are usually smaller localities, i.e. rural or urban-rural municipalities located around a single centre, which is a medium-sized city. On the other hand, larger units (KMP) either focus exclusively on serving a large city with poviat rights or combine this with service in nearby municipalities. The specificity of the locality where the surveyed police officers perform their duties undoubtedly influences the assessment of the perception of different aspects of media relations activities. For example, police officers from smaller units were much more likely to prefer a telephone conversation with journalists

(63 per cent) than press officers from larger units (42 per cent). On the other hand, officers from KMP were more likely to use SMS or MMS messaging than police officers from KPP (11 per cent vs. 5 per cent). A more numerous group of press officers from larger units perceived the importance in media relations activities of newspaper editorials (12 per cent in KMP against no indication in KPP) and television editorials (18 per cent in KMP against 12 per cent in KPP), and the effectiveness of social media was rated significantly higher by police officers from KMP than from KMP (35 per cent against 25 per cent). KMP had a higher (89 per cent vs. 77 per cent) number of responses noting that journalists prefer face-to-face contact. The difference was mainly offset by more frequent declarations of having no formed opinion on the subject (15 per cent KPP vs. 5 per cent KMP). It is also clear that respondents from KPP indicated a lower size of the journalistic community than respondents from KMP (answer: more than 10 people - 8% KPP vs. 26% KMP), and less frequently characterised journalists as specialised investigative or police reporters (23% KPP vs. 42% KMP). The disproportion in the identification of the substantive preparation of journalists of the various media can testify to the condition of the local press in smaller localities, where, in the case of magazines, the level of positive indications was only 20 per cent in district commands and as high as 35 per cent in city commands. The level of specialised preparation of press officers, on the other hand, is reflected in the significantly higher percentage of responses expressing disapproval of the publication of a rectification among police officers from KMP (21 per cent) than officers from KMP (8 per cent), which indicates a desire to maintain partnership relations with journalists. Instead of resorting to a 'repressive' tool, such as having a rectification published showing the journalist's mistakes, they prefer an influence based on dialogue, presenting arguments or persuasion. Among municipal police officers, there was also a greater polarisation of opinions on the social prestige of the journalist's profession. More often, respondents from KMP considered it high (31 per cent vs. 23 per cent of KPP) or low (16 per cent vs. 8 per cent of KPP), and less often perceived it as average (53 per cent vs. 69 per cent of KPP).

4.1. Benchmarking performance and identifying trends of change from 2017 to 2022

During the survey carried out in 2022, the conviction was confirmed that - as five years earlier - the press officer, due to the complexity of the duties performed, should be characterised by "multitasking". This implies the need to have expertise in various aspects of police activity (substantive competence) combined with the ability to establish and maintain interpersonal contacts. There is also a requirement for knowledge of the principles of mass media (media competence) and the ability to operate modern media distribution tools (technological competence). Conclusions from the study mentioned in Chapter II carried out in the Silesian garrison in 2017 compared to the results of 2022 have not lost their relevance.

The comparative analysis made it possible to grasp the most important trends in terms of changes in media relations activities in the same research field, which became apparent during the five years separating the two projects. It is characteristic, however, that despite the transformations taking place in the technological environment (e.g. the development of communicators using the potential of cyberspace or the constant improvement of methods of recording, editing and making multimedia materials available), no radical transformations were noted in the field of news communication techniques themselves.

In 2022, as in 2017, the telephone call still held the top spot, which, interestingly, received the same number of indications as five years ago (52 per cent).

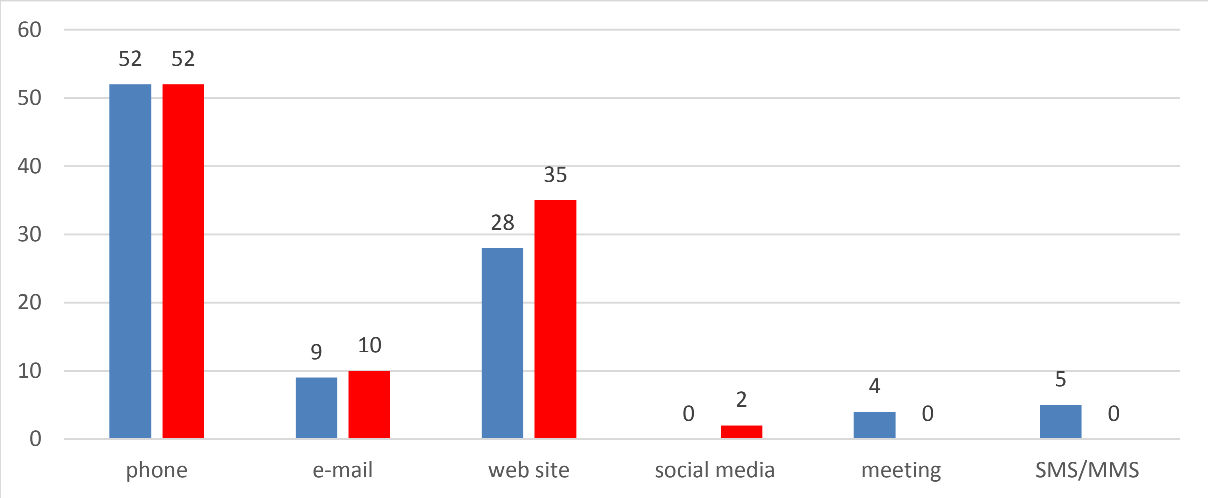

Figure 3. Summary of changes in the most frequently used tools of communication with journalists by press officers (blue - 2022, red - 2017). Percentage breakdown.

In 2017, the second dominant way of maintaining relations with journalists was no longer a form of face-to-face communication such as a phone call, but posting information on a website (35 per cent), a position it retained in 2022, but with slightly fewer indications (28 per cent). So did emailing, which was in third place (2017 - 10 per cent and 2022 - 9 per cent). On the other hand, there was a slight increase (to 4 per cent) in the number of police officers declaring meeting journalists as a form of contact used, while the use of social media, which reached 2 per cent in 2017, was abandoned, which, moreover, indicated the incidental nature of the use of this method.

More serious transformations were, however, noted in the perceptions of the press officers surveyed regarding the social reach and communication effectiveness of the various media. In 2017, television (43 per cent) was the media most appreciated by officers, followed by the media available in cyberspace: online portals (22 per cent) and social media (22 per cent). The list was closed by traditional mass media such as newspapers (6 per cent) and radio stations (6 per cent). After five years, online broadcasters (33 per cent) and social media (30 per cent) have achieved a dominant position. Television saw a major decline (to 15 per cent), newspapers maintained their position (6 per cent) and radio was more popular (up to 15 per cent).

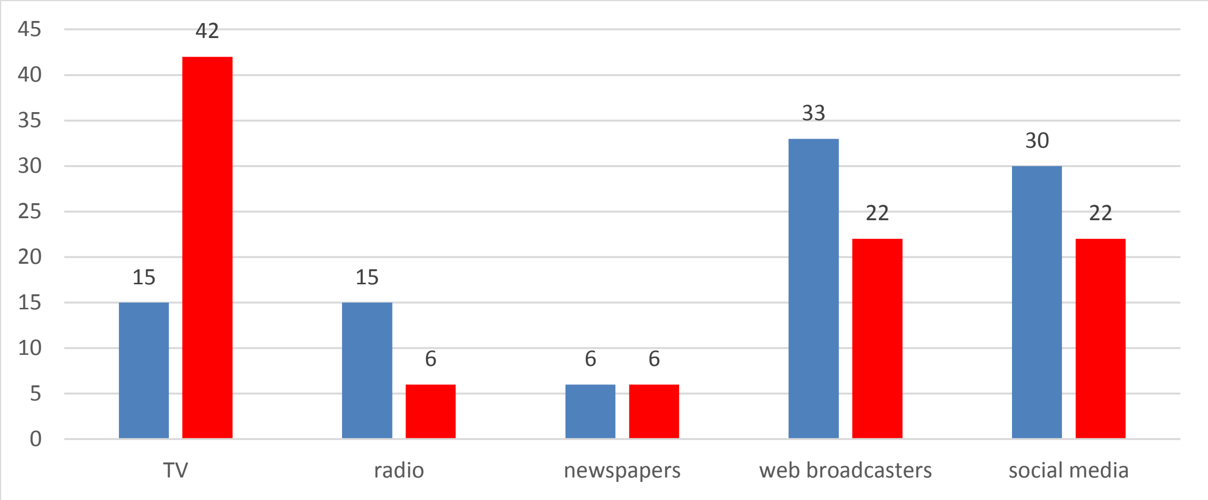

Figure 4. Transformation of press officers' opinions on the media providing the most effective outreach to residents (blue - 2022, red - 2017). Shot in percentage terms.

When asked about the type of contact they thought journalists preferred, press officers were still overwhelmingly convinced that face-to-face coverage was the most expected form (90 per cent in 2017 and 83 per cent in 2022). In 2022, the number of responses expressing a lack of competence of press officers towards identifying journalists' preferences increased to 10 per cent (five years earlier, no respondent indicated an answer of 'I have no opinion'), while the number of declarations of the lack of importance of the type of contact form decreased to 6 per cent.

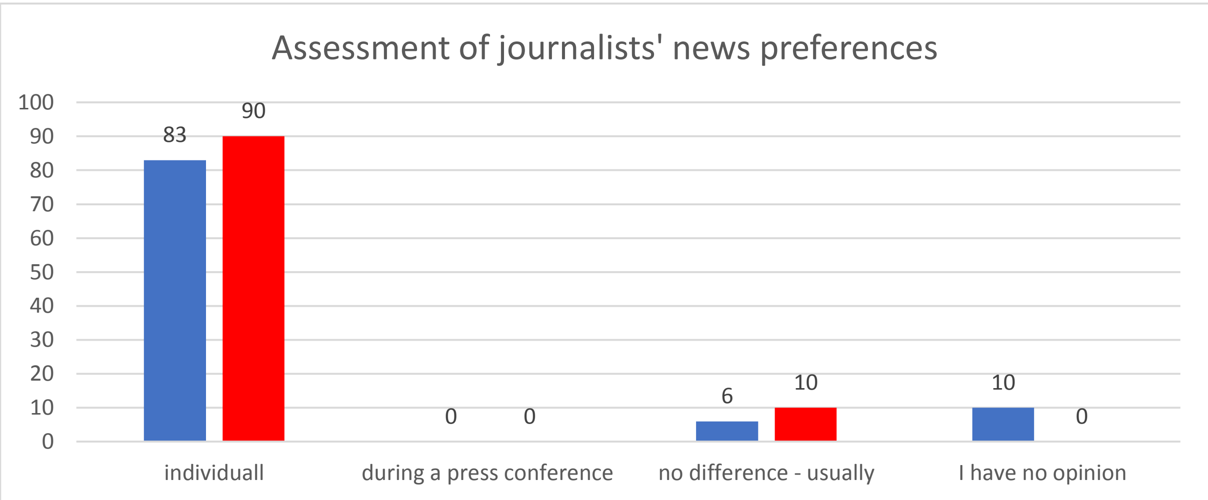

Figure 5. Press officers' opinions on journalists' preferred methods of obtaining information (blue - 2022, red - 2017). Percentage capture.

In contrast, when considering the level of approval towards press officers' use of rectification as an adequate form of response to errors and misrepresentations disseminated in the mass media, the survey revealed a sharp increase from 53 per cent in 2017 to 75 per cent in 2022. Disapproval was expressed by respectively: 37 per cent and 14 per cent, with a similar proportion of responses (10 per cent each) indicating that they did not have an educated view on the subject.

When assessing the professionalism of mass media professionals, television journalists scored highest (with an increase from 35 per cent in 2017 to a status of 41 per cent in 2022). In contrast, the largest decrease was revealed for print journalists (from 38 per cent to 27 per cent). Minimal differences were also noted for radio staff (from 24 per cent to 22 per cent) and online broadcasters (from 5 per cent to 8 per cent).

4.2. Information policy management

The proper shaping of information policy has a significant impact on the reception of communicated content. Information is an important component of shaping a security culture (Kuzior, Lobanova, 2020; Kuzior, 2014). According to media scholars, there is also a growing role for public administration communication both at the centre and on the ground. This is due to the direct 'feel' of administrative decisions by citizens. In the administrative system, there are press officers at all levels, generally professionally trained to perform their functions. In addition to providing information, their main task is to explain to local and regional public opinion specific decisions and problems that have a bearing on citizens' lives (Michalczyk, 2020, p. 238; Kuzior et al., 2021). To a large extent, this also applies to the police. Moreover, the police, as a state administration body, are obliged to create the necessary conditions for media representatives to perform their functions and to provide information on their activities (Stawnicka, 2013, p. 165).

One of the important elements of conducting communication activities is to build and consolidate the assumed image and develop partnership relations with the police community. The media activity of press officers also serves this purpose. It must be admitted, however, that on the one hand the formation strives for the trust of citizens and the creation of permanent structures of cooperation with the public, on the other hand, when it is necessary to suppress certain (negative) social phenomena quite quickly, it applies the so-called destructive strategy, disregarding the disappearance of social support for the activities carried out (Fuks, Fus, 2023, p. 44). As a consequence, the police currently face a number of serious organisational, personnel and public trust deficit problems. Among the changes that could increase the efficiency of the institution, positively influence its independence and improve its image, decentralisation could be considered. However, politicians are not interested in this direction (Nyzio, 2022, p. 220). Meanwhile, rebuilding lost credibility also requires strenuous work at the grassroots, i.e. at the level of district and city commands. This task then falls more heavily on press officers.

Among the numerous actors in the media relations sphere, the police information service certainly enjoys a privileged position. Such a situation is due to the nature of the information that press officers are in charge of. Events handled by officers involved in combating broadly defined crime against life, health, property or road safety easily attract the interest of the mass media. The same is true of news concerning, for example, drug crime, economic crime or crime of manners. A press officer in possession of news sought by journalists does not have to make special efforts to publicise it. This is because reporters themselves apply for access to this data.

This is probably the reason for the continued use of the most popular content distribution tool, the telephone call, at 52 per cent over a five-year period. It can also be assumed that the lack of need for marketing management of contacts with the media environment aimed at maintaining mutually beneficial relations is also one of the sources of the high level of approval for the use of the rectification (up from 53% to 75%), which, after all, unequivocally demonstrates an error by the journalist or editorial office. Spokespersons for commercial entities tend to be more cautious about automating the process of revealing a misstatement and the subsequent demand for a rectification in favour of educational, popularisation or even lobbying activities.

Unlike the spokespersons of institutions or public administrations, and especially commercial companies, the situation prevailing in the media market does not usually necessitate measures to increase the public reach of the content presented. The press officer may focus more on their selection, which is appropriate from the point of view of police operations. However, officers are aware of the communication preferences of journalists, knowing that individual contact is most often of higher value to them (indications of 8 to 9 police officers out of 10 officers in both research projects) than participation in a press conference.

5. Conclusions

The police, like other authority structures, in order to achieve their goals and interests, create a network of communication and dialogue within social structures, using the available communication channels - the local media. The conditions for the effectiveness of communication are two-wayness, i.e. dialogue; attractiveness of the sender, i.e. the degree of sympathy that the sender evokes in the recipient, e.g. by means of a media or direct image of a representative of the authorities; the communication channels used; the characteristics of the message, i.e. the form of the message due to its accuracy, emotionality, which are intended to exert a specific social influence on the recipient's decision-making process (Batorowska, 2020, p. 284) The result of the process is an attempt to influence the audience. Recipients may recognise the arguments given, succumb to the persuasive techniques used or, in extreme cases, fall victim to disinformation activities. It is therefore necessary to define and respect the limits of what is desirable, e.g. in the interest of an investigation, to 'filter' the data. But this does not justify manipulation or confabulation, as the person giving false data is no longer an interlocutor. Lying to journalists, giving them little factual information or even restricting their access to police findings can have negative consequences - and very quickly (Szwejkowski, Śmiałek, 2014, p. 175). It should always be borne in mind when dealing with representatives of the mass media that it is they who create the company's image in their publications, and the press service must ensure that it is as good as possible. Lack of cooperation in this respect, or cooperation based on the company's ad hoc information policy, will certainly not bring benefits (Sokolowski, 2014, p. 224). Therefore, the press officer should be characterised by knowledge of the functioning of the media market. Sometimes the source of mutual hostility or dislike may be a lack of knowledge of the specifics of the profession. For a journalist, information is a basic commodity (Bekulard 2018, p. 104), and an officer implementing an information policy may not provide full access to it. Bias, although criticised from the point of view of ethics and journalistic professionalism, is inherent in the operation of the media (Szostok-Nowacka, 2023, p. 96). This is also something that the press officer should be aware of.

The management of police information policy must furthermore include a risk aspect. The training of press officers, as well as motivation and integration measures, certainly have an impact on reducing the possibility of adverse events. All the more so as the achievement of image goals should be treated in long-term terms, and the risk is greater the longer the period planned to achieve the goal is due to internal (e.g. unqualified management, employee turnover, inadequate organisational structure) and external factors that may arise (Kochańczyk, 2019, p. 269). Moreover, from the point of view of public relations theory, responding to media demands and providing information in relation to events that have taken place is an insufficient activity. An important task of uniformed services press officers in their cooperation with journalists is to use them for educational and preventive purposes (Gawronski, 2011, p. 133). All the more so as press officers can be a source of verified, reliable and credible information, which is of great importance in view of the threat of disinformation and dissemination of factual news. Unfortunately, many publications contain false or unverified information. The editors of these sites hold journalists accountable not for the quality of the publication in terms of content, but for the number of clicks and page views (Ciarka, 2021, p. 11). It is also worth highlighting at this point the crucial importance of media audience education. The role of the media in shaping the image of every institution and individual is indisputable, but it is the recipient of this content who should apply the appropriate filters and be aware to shape their own opinion and perception of the social world (Żak, 2018, p. 124). Including, of course, the functioning of the police, which requires the keepers of information, i.e. the press services, to be more involved in its dissemination taking into account the media used by the media audience or, in a broader sense, the social environment. In the five years separating the two studies, press officers have undergone an evolution in their perception of cyberspace. Both online broadcasters and social media are rated highly in terms of the effectiveness of data communication. However, the state of awareness is not followed by the practice of daily service. Social media are neglected in it. Perhaps the use of social media for communication purposes depends on the police having a proper understanding of how social networks, interest groups and community organisations function (Fielding, 2023). Then again, due to the nature of this type of media and especially its interactivity, there are also concerns on the audience side about lack of access, bureaucracy and lack of trust in the police's knowledge of social media (Howlings, Solymosi, 2023, p. 25).

By reliably providing journalists and, consequently, readers, listeners, viewers or users of Internet media with verified news, press officers can support the effectiveness of the communication process and create a positive image of their formation. Training and an efficient internal communication system in the police should serve this purpose. Meanwhile, a study of recognition and readership among officers of periodicals addressed to them showed little interest in the message conveyed by professional publications. They are more often read by civilian and police office employees than by other officers' (Łaski, 2021, p. 157). This points to internal communication as one sphere for further media studies and, at the same time, an area that requires intervention for police information policy managers.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

CARPOOLING AND NATURAL RESOURCE PROTECTION: SHARED TRANSPORT USERS' PERSPECTIVE

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Purpose: This article aims to explore users' willingness to share with others and relinquish ownership. It also investigates whether these attitudes notably impact the adoption of shared carpooling and the imperative to preserve natural resources in the environment.
Design/methodology/approach: This research was conducted through a survey questionnaire among users of social networks that focus on shared travel, ecology, anthropological climate change and the environment.
Findings: 'Residence' impacts the inclination to share and relinquish ownership for environmental conservation. Conversely, 'gender' and 'age' don't significantly affect consumer attitudes. Acceptance of carpooling hinges on 'ease', 'usefulness', and 'economic value'for those open to sharing. Additionally, 'perceived development' matters for those willing to forgo ownership. Conservation concerns arise among advocates of 'sustainable consumption', 'eco-friendly business practices', and 'alternative' options in carpooling. Giving up ownership ties to both 'sustainable consumption' and 'social-economic attitudes' aligned with resource conservation.
Research limitations/implications: The research focused on two attitudes affecting consumer behavior in terms of acceptance of carpooling transportation and the need to protect environmental natural resources. Therefore, it is necessary to study further the reasons that confirm the validity of carpooling activities and the particular need to care for the environment.
Practical and social implications: The findings underscore the importance of advocating for sharing and relinquishing ownership to safeguard natural resources. Heightened awareness and comprehension of the repercussions of personal choices in business and social spheres are crucial. This article significantly contributes to the movement toward conserving natural resources by advocating for thrifty and health-conscious lifestyles, along with conscientious and effective resource utilization.
Originality/value: The article provides an understanding of the reasons for accepting carpooling transportation and the need to protect natural resources. It highlights the significance of collaborative efforts that yield benefits for both people and the environment.
Keywords: carpooling, natural resource protection, acceptance, sharing, and giving up ownership.
Category of the paper: Research article.

1. Introduction

Given that global car production is expected to increase by 12.1% (Goldman Sachs, 2022), and global road emissions are expected to double by 2050 (Forsal.co.uk, 2021), it becomes clear that sustainable travel is a key element in developing alternative modes of transportation to minimize the environmental impact of cars. Among various transportation solutions, carpooling, or traveling together, is emerging as a practical measure to solve the problems of congested streets and atmospheric carbon pollution (Cui et al., 2021; Shaheen, Cohen, 2019; Furuhata et al., 2013; Neoh et al., 2017). However, it is noteworthy that the effectiveness of carpooling depends on several factors, including the availability of carpooling options, the degree of community organization and willingness to cooperate, attitudes toward ownership, propensity to share, and the transportation infrastructure of a region (Garrison et al., 2011; Neoh et al., 2017). Despite proven potential benefits such as environmental benefits, economic savings and social benefits (Greene, Wegener, 1997; Gärling, Steg, 2007; Kelley, 2007; Chan, Shaheen, 2011; Morency, 2007; Shaheen et al., 2016), carpooling still faces psychological and personal barriers to its acceptance (Morency, 2007; Olsson et al., 2019; Correia, Viegas, 2011). But in recent years, the emergence of online platforms and applications that facilitate communication and resource sharing has resulted in rapid growth and increased propensity for carpooling, both in daily life and for long-distance travel (Shaheen et al., 2017; Ganapati, Reddick, 2018; Furuhata et al., 2013; Gardner, Abraham, 2007). These changes can be combined with a growing demand for natural resource conservation both among ordinary people and in international and governmental organizations around the world, such as Greenpeace, the United Nations Environment Program (UNEP), the World Wildlife Organization (WNO), the World Environmental Organization, or the Intergovernmental Panel of Experts on Climate Change (IPCC), or the Commission on Environment, Natural Resources and Forestry (OSZ), whose activities are focused on environmental protection (Eccarius, Lu, 2020; Canning et al., 2010; Park et al., 2012; OSZ, 2023; Thpanorama, 2023). The problem of the inability to restore used natural resources and protect those that have not yet degraded has become one of the main challenges of our time (Thpanorama, 2023). In light of this, given the preservation of natural resources, initiatives such as carpooling seem to be both a logical and necessary step towards promoting this form of transportation among the public.

This article examines users' propensity to share with others and their willingness to give up possessions for the common good. In addition, it examined whether these attitudes translate significantly into acceptance of carpooling and a general understanding of the need to conserve natural resources.

2. Carpooling and the environment - factors supporting the acceptance of this type of transport and the need to protect natural resources

2.1. Understanding carpooling transport

A literature review allows us to track the evolution of such initiatives within the sharing economy (Belk, 2014; Hofmann et al., 2019). Carpooling most often describes a situation in which a driver shares his car with people not members of his household to make a trip (or part of a trip) over a short or long distance he has already planned. Carpooling can be free or based on cost sharing (Cui et al., 2021; Shaheen, Cohen, 2019; Furuhata et al., 2013; Aguiléra, Pigalle, 2021). It should be noted that carpooling differs from ridehailing, in which people use professional or part-time drivers through mobile apps and pay for the ride (Tirachini, 2020). In carpooling, the driver is usually an individual who decides to travel together with other people, sometimes for free and sometimes with cost sharing, such as the cost of fuel. Also, carpooling is not the same as carsharing, where users can access vehicles for a specified period but do not own them (Lagadic et al., 2019). It's also worth noting that carpooling encompasses various categories and is subject to multiple classifications in the literature (Neoh et al., 2017). These categories often relate to the purpose of the trip (work-related or private), the method of connecting drivers and passengers (whether based on technology or haphazard), and the relationship between driver and passengers (whether or not they are related in the same household) (Shaheen, Cohen, 2019).

In this article, carpooling is not limited to a specific arrangement type, such as home carpooling or business carpooling, nor does it consider restrictions related to the relationship type between passengers and drivers (i.e., people who are professionally or casually related).

The carpooling approach in this paper is based on the very fact of willingness to share and give up ownership of one's means of transportation as long as one's immediate environment makes it possible to share transport with others (Adelé et al., 2012). It's important to understand that this mode of travel has a positive impact on the environment but also carries benefits for the user, both economically and socially (Greene et al., 1997; Gärling, Steg, 2007).

Therefore, in the remainder of the article, "carpooling" refers to joint car trips by people who are not necessarily bound by specific relationships or destinations and who choose to travel together, already planned by the driver, without profit (although travel costs may be shared). Both business and private trips are considered, whether technology-based or ad hoc.

2.2. Carpooling as an environmental strategy

Carpooling is one of many strategies to reduce the environmental impact of transportation. Other related initiatives include using public transportation, bicycling, walking trips, and developing cleaner vehicle technologies such as electric or autonomous cars (Ma et al., 2018; Kim, Kim, 2020). All of these activities are important for conserving natural resources and reducing the negative environmental impact of transportation.

Carpooling is currently interesting to researchers and public authorities (Delhomme, Gheorghiu, 2016; Gheorghiu, Delhomme, 2018). It is considered a relatively inexpensive option for reducing the number of cars and single-passenger vehicles, a major environmental challenge contributing to traffic congestion and air pollution (Wicki et al., 2019). Reducing traffic congestion positively relieves traffic jams, leading to time savings and lower emissions (Greene, Wegener, 1997; Gärling, Steg, 2007). In addition, fewer cars on the road result in less demand for parking spaces, which contributes to reducing the need to build parking lots and asphalt, which positively impacts the environment. Carpooling can also help increase people's environmental awareness and encourage them to make more sustainable transportation choices (Aguiléra, Pigalle, 2021; Gheorghiu, Delhomme, 2018).

The literature also describes barriers to carpooling (Olsson et al., 2019). Research has shown that the impact of carpooling on travel behavior, particularly owning and using one's own car, is inconclusive (Shaheen et al., 2016; Concas, Winters, 2007; Javid, Al-Khayyat, 2021). Nevertheless, IT-based carpooling, using platforms and apps, and changes in society's lifestyles are contributing to the renewed popularity of this form of transportation, as in the case of Blablacar (Shaheen et al., 2017; Furuhata et al., 2013).

2.3. Willingness to share and give up ownership for ownership as factors in carpooling use

Research on factors influencing individual carpooling decisions points to various levels of categorization, such as socio-demographic, psychological, spatial, and temporal, based on car availability and attitudes (Buliung et al., 2010; Arbour-Nicitopoulos et al., 2012; Neoh et al., 2017; Gardner, Abraham, 2007). These factors can be categorized as internal to the person using carpooling. Intrinsic factors relate to the individual characteristics of each carpool user, including demographics, while evaluation factors relate to thoughts on the benefits of carpooling. External factors, on the other hand, connect to the carpooler's environment, along with the influence of third parties, such as political regulations that facilitate carpooling and situational factors related to location. Factors with internal origins significantly impact the propensity to share with others and the willingness to give up possession for ownership. They significantly impact the evolution of carpooling users' consumption habits (Neoh et al., 2017). As the sharing economy services have grown (Shaheen et al., 2016; Concas, Winters, 2007; Javid, Al-Khayyat, 2021), habits have become more noticeable. Customers have shifted their focus from buying new products and services to a greater appreciation of sharing and reusing these goods (Rong et al., 2021; Jeon et al., 2020). The modern consumer is no longer limited to owning things, he is more interested in access to products and services (Falcone, Imbert, 2017). This phenomenon is confirmed by Hamari et al.'s (2016) research on young people involved in the sharing economy and their intentions to actively participate in this consumption model (Hamari et al., 2016).

Awareness and knowledge of the sharing system and environmental values influence intentions to carpool (Eccarius, Lu, 2020). Lack of incentives or motivation can be an obstacle to encouraging people to use sharing (e.g., lack of recognition of such behavior, lack of enjoyment or good reputation) (Goldstein et al., 2008; Hamari et al., 2016). Attitudes toward sharing consumption may influence intentions to participate in such activities, but its impact may be less when people consider actual participation rather than just declarations (Hamari et al., 2016). Therefore, there is a need for further research in this area, as attitude does not always translate into user behavior, although it is a significant factor in changing it (Ajzen, 1991).

2.4. Acceptance of carpooling transport

The acceptance level of carpooling depends on many factors influencing the decision to use this form of transportation. The user needs to be able to evaluate this form of transportation as valuable. Based on a review of the literature, it is possible to identify several factors that can influence the development of trust in carpooling services (Gardner, Abraham, 2007; Neoh et al., 2017). Here are some of these values:

- perceived ease of use refers to the degree to which carpooling services are considered easy (Venkatesh et al., 2012; Van der Heijden, 2004). The easier the service is to use, the more value and trust it generates for the user (Kim et al., 2009). Thanks to mobile apps and social networks, consumers can now order carpooling services and more easily find suitable co-passengers (Dinesh et al., 2021; Adelé, Dionisio, 2020; Cheng, et al., 2020). Perceived ease of use is a key factor in the acceptance and use of carpooling services, and increases trust in the service provider.
- perceived usefulness, which refers to the effectiveness of carpooling in achieving individual user goals (Venkatesh et al., 2012; Van der Heijden, 2004; Deci et al., 1999; Ma et al., 2018). Users expect that carpooling will allow them to achieve their goals, such as saving on travel costs, moving around comfortably, or living according to their beliefs, such as environmentally. Carpooling also makes it possible to meet new people influences consumers' decisions to accept or continue using this type of transportation solution (Kim et al., 2009; Dueker et al., 1977).
- perceived economic value, which is based on assessing the costs and benefits of carpooling. If the benefits of doing something outweigh the prices to be incurred, a high level of value is perceived (Sweeney, Sou, 2001; Kim, Han, 2009; Kim, 2012). Consumers are inclined to choose the option that allows them to maximize value. Saving travel costs is a significant motivator for carpooling, as it minimizes the costs associated with a private car (Canning et al., 2010; Washbrook et al., 2006).

- perceived intangible value, which includes motivations such as environmental protection, healthy lifestyles, and the opportunity to make new friends (Ben-Elia, Zhen, 2018; Arteaga-Sánchez et al., 2020; Canning et al., 2010). These motivations influence consumer behavior, continued use of carpooling services, and build trust in this type of service.
- continuation intention refers to a user's attitude toward repeated shared consumption (Hamari et al., 2016). Carpooling users often use the service to reduce congestion on the roads, reduce their carbon footprint, etc., suggesting that environmental and ethical frameworks may influence their decisions (Canning et al., 2010; Collura, 1994). For example, 55% of respondents agree that they should reduce driving for environmental reasons (Park et al., 2012). However, the intention to continue may be distorted by privacy risks or a sense of security (Correia, Viegas, 2011; Park et al., 2012; Davis, 1989).
- perceived development refers to identifying areas where carpooling has growth potential. Aguiléra and Pigalle (2021) highlight low-density regions in their work. In these areas, for both environmental and social reasons, mobility challenges will be most significant in the coming years, especially for public authorities. Average distances, car ownership, and use are more common there than in urban areas (Aguiléra, Pigalle, 2021). Carpooling can complement public transportation (Le Vine, Adamou, 2014).
- trust in the service provider refers to the belief that the service provider will act according to the user's expectations and not engage in opportunistic behavior. This trust is key in building lasting relationships and influences decisions to carpool again (Kim, 2019). It is worth adding that trust in the service provider is closely linked to protecting user data privacy. Improper or illegal use of customers' information without explicit consent reduces confidence in this type of transportation and can deter users from reusing the service (Wu, Kim, 2019).

2.5. Consumers' attitude to natural resource protection

The need to protect natural resources is a crucial argument to justify promoting and accepting carpooling activities. The popularization of carpooling can reduce transportation's negative impact on the environment. However, achieving this goal requires a comprehensive approach to environmental protection at various levels, including international, EU, national, and social units. People's attitude toward protecting natural resources is essential to guarantee humanity's future (Thpanorama, 2023; Zębek, 2017).

A social unit's (consumer's) attitude toward the conservation of natural resources may result from various internal or external factors. A social unit may strive or expect others to, for example:

- sustainable consumption, or rather the opportunity to be a sustainable customer who has adopted the LOHAS (Lifestyles of Health and Sustainability) lifestyle as their responsibility (Lubowiecki-Vikuk et al., 2020; Choi, Feinberg, 2021). The environment, health, sustainability, and social justice are important for their representatives. They are considered "culture makers," "conscious consumers," or "change seekers" (French, Rogers, 2010; Jayaratne et al., 2017). They seek to protect themselves and their world through sustainable purchasing decisions (Ottman, 1993). They emphasize the need for obvious environmental protection (Lubowiecki-Vikuk et al., 2020). Admittedly, research shows that consumers do not always follow through with what they declare; namely, while declaring environmental values in their daily lives, they do not demonstrate this in their actual purchases. Consumer behavior is complex, as many factors influence the final purchase decision, such as cost, purpose, availability, and alternative options (Sharpley, 2001; Moisander, 2007).
- sustainable actions by companies that actively offer social benefits or public services and voluntarily minimize harmful environmental and societal practices (Lubowiecki-Vikuk et al., 2020; Vitell, 2015). This approach results from CSR (Corporate Social Responsibility) or CSV (Creating Shared Value) activities. Companies that implement sustainable practices can benefit from building a good image and increasing profitability (Leib&Leib, 2010). These activities must be carried out with consumer participation, include social, environmental, and economic aspects, and are seen as developing solutions that meet everyday needs without compromising the ability of future generations to meet their own needs (Lubowiecki-Vikuk et al., 2020; Ramirez et al., 2014).
- valuable alternatives that allow you to make purchases based on your beliefs, especially those related to a moral sense of belonging to the environment. Such choices lead to deeper self-understanding, self-realization, and personal growth (Kettemann, Marko, 2012). Being able to choose environmentally friendly products or services is a sense worth embracing despite the cost (Moisander, 2007). The customer personally sees the benefit of the amount paid. The availability of such alternatives can lead to a change in consumer behavior. In general, a lack of alignment between values and purchasing decisions can influence the avoidance of carpooling (Eccarius, Lu, 2020).
- developing social and economic attitudes based on a local or global framework of environmental and ethical issues to build social beliefs. Examples include giving up property ownership and instead sharing with others, which helps reduce carbon emissions (Collura, 1994; Canning et al., 2010). This can also include monitoring product production, sale, consumption, and disposal to ensure minimal environmental impact (Yeh, Chen, 2011). Emphasize the importance of recycling and biodegradation (Choi, Feinberg, 2021). Develop a preference in society to buy products from companies with social values similar to those they declare (Pícha, Navrátil, 2019).

- ecological/environmental awareness (attitude) of individuals and entities in the environment. An ecological approach to life includes reducing consumption of the earth's natural resources and one's resources. Individuals with such attitudes seek to contribute to reducing their carbon footprint by changing transportation and reducing energy consumption (Park et al., 2012). They are important because research confirms a positive relationship between pro-environmental attitudes and the willingness to change one's behavior (Kilbourne et al., 2002). Environmental security is a basic need for society (Zębek, 2017).

3. Methods

3.1. Structure of respondents

A total of 101 respondents took part in the survey. The survey group comprised 52.5% women (53 people) and 47.5% men (47). Residents of towns with populations between 101,000 and 500,000 were the largest group, accounting for 26.7% of the total. In order of importance were residents of cities with a population of less than 10,000 (23.8%) and less than 500,000 (22.8%) Table 1. The largest group was young adults between 18 and 24, accounting for 57.4% of the respondents. This result is also confirmed by the literature, where it is indicates that it is mainly younger people who are willing to use shared transportation services and are active users of the Internet and mobile applications (Ganapati, Reddick, 2018; Shaheen, Cohen, 2019; Bielinski, Ważna, 2020; Guo, Zhang, 2021; Suchanek, Szmelter-Jarosz, 2019; Globalwebindex, 2017; Standing et al., 2018; Rayle et al., 2014). It is worth noting that the study also includes minors, who can participate in the type of transportation with their guardian's consent (Blabla.com, 2023).

Table 1.
Structure of the survey sample

Residence size	Female	Male	Total (N)	%
Less than 10 thousand residents	15	9	24	23.8
10 - 50 thousand residents	6	8	14	13.9
51 - 100 thousand residents	5	8	13	12.9
101 - 500 thousand residents	14	13	27	26.7
More than 500 thousand residents	13	10	23	22.8
Total (N)	53	47	101	100
%	52.5	47.5	100	x

Source: own research. N-sample surveyed.

3.2. Method and measurement tool

The research was conducted using an electronic survey questionnaire (CAWI - Computer Assisted Web Interviews) among social media platform users related to carpooling (such as BlaBlaCar, inonecar, and JedziemyRazem.pl), ecology, and issues of anthropogenic climate change and environmental protection. It was conducted in May 2023 and is a declarative survey.

The survey questionnaire included closed questions and used a nominal and ordinal scale (Likert 1-7). The items assessed to respondents were developed based on a review of the literature, which was briefly presented in the earlier discussion. The results were analyzed using PS IMAGO PRO 6 software and IBM SPSS Statistics 28. Data were subjected to frequency analysis, non-parametric tests such as the Mann-Whitney U test and Kruskal-Wallis test, and the Spearman rank correlation coefficient (rho-Spearman) was used (Grzeszkiewicz-Radulska et al., 2020).

3.3. Purpose of the survey and research questions

This study aimed to understand participants' attitudes toward carpooling and their attitudes toward activities based on sharing with others and giving up their possessions in the context of the need to conserve natural resources.

They prepared the following research questions:

RQ1: How do respondents relate to the idea of sharing to conserve natural resources, considering different profiling variables of respondents (gender, age, or residence)?

RQ2: How does participants' willingness to give up individual ownership in favor of shared access to goods and services affect their attitudes toward natural resource conservation, given the differences between groups according to respondents' profiling variables (gender, age, residence)?

RQ3: Does willingness to share with others matter for:

A. overall acceptance and evaluation of carpooling solutions?

B. overall perception of the need to conserve natural resources?

RQ4: Does respondents' willingness to give up individual ownership in favor of shared access to various goods and services significantly affect their opinion regarding:

A. general acceptance and evaluation of carpooling solutions?

B. the overall perceived importance of natural resource conservation?

4. Findings

Because of research question RQ1, we can conclude that the variables, i.e., 'gender' ($U = 1180$; $p = 0.520$; $\alpha = 0.05$) and 'age' ($H = 7.493$; $p = 0.112$; $\alpha = 0.05$) do not show significant differences in the aspect of sharing with others through the lens of natural resource conservation. In contrast, the variable 'place of residence' showed statistically significant differences between the study groups (H = 12.586; p = 0.013, α = 0.05). The analysis for this variable identified three groups of respondents, indicating that those living in areas with populations between 101,000 and 500,000 (Mrang = 53.85), above 500,000 (Mrang = 57.15), and below 10,000 (Mrang = 57.83) are more in agreement with the statement "that sharing with others positively affects natural resource conservation" than those in areas with populations between 10,000 and 50,000 (Mrang = 27.36) (Table 2). We can surmise that larger cities face higher pollution levels, but residents' awareness plays a key role in preventing the degradation of natural resources.

Table 2.
Nonparametric test results for research question RQ1 and RQ2

Nonparametric test	Variable	RQ1 Value	RQ1 Significance (p)*	RQ2 Value	RQ2 Significance (p)* Value	
U Manna-Whitney'a for independent samples	Gender	U = 1180	0.520	U = 1375	0.464	
H Kruskala-Wallisa for independent samples	Age	H = 7.493	0.112	H = 2.441	0.655	
H Kruskala-Wallisa for independent samples	Residence	H = 12.586	0.013*	H = 13.298	0.010*	
RQ1 Groups for the variable 'residence':				**RQ2 Groups for variable 'residence':**		
Group 1: Group of 101-500 thousand residents (Mrang = 53.85) from 10-50 thousand residents (Mrang = 27.36).		D** = -26.49	0.048*	Group 1: Group of 101-500 thousand residents (Mrang = 57.17) from 10-50 thousand residents (Mrang = 26.00).	D** =-31.167	0.007*
Group 2: Group of over 500 thousand residents (Mrang = 57.15) from 10-50 thousand residents (Mrang = 27.36)		D = -29.795	0.021*	Group 2: Group of over 500 thousand residents (Mrang = 55.13) from 10-50 thousand residents (Mrang = 26.00)	D = -29.130	0.022*
Group 3: Group of less than 10 thousand residents (Mrang=57.83) from 10-50 thousand residents (Mrang=27.36)		D = 30.476	0.015*	Group 3: Group of less than 10 thousand residents (Mrang = 54.46) from 10-50 thousand residents (Mrang = 26.00)	D = 28.458	0.025*

*α ≤ 0.05; **D = Dunn's test.

Source: own research.

On the other hand, referring to question RQ2, we can conclude that the variables, i.e., 'gender' ($U = 1375$; $p = 0.464$; $\alpha = 0.05$) and 'age' ($H = 2.441$; $p = 0.655$; $\alpha = 0.05$) do not show significant differences in the willingness to give up ownership of something when there is free access to various goods and services. In contrast, the variable 'place of residence' showed statistically significant differences between the study groups ($H = 13.298$; $p = 0.010$; $\alpha = 0.05$). The analysis for this variable identified three groups of respondents, indicating that those living in areas with populations of 101,000 to 500,000 (Mrang = 57.17), above 500,000 (Mrang = 55.13) and below 10,000 (Mrang = 54.46) are more in line with the statement "that there is a tendency to give up ownership of something when there is free access to various goods and services" than those from areas with populations of 10,000 to 50,000 (Mrang = 26.00) (Table 2). It can be assumed that larger cities offer more diverse access to various goods and services compared to smaller areas of residence. However, opting out is not solely due to accessibility but often due to the user's level of awareness of the possibilities and benefits of doing so, both for themselves and society.

An analysis using Spearman's rank correlation coefficient (rho-Spearman) was conducted to identify significant statistical differences in the context of research question RQ3, which relates to the relationship between respondents' propensity to share with others and their overall acceptance and evaluation of carpooling solutions and the need to protect natural resources (Table 3).

The rho-Spearman analysis showed positive correlations between the variable "espondents' willingness to share with others to protect natural resources" and three specific aspects of carpooling acceptance (Table 3. RQ3. A; item numbering as shown in the table):

1. perceived ease of carpooling (rho = 0.308): There is a clear but low positive ($0.2 < \text{rho} \leqq 0.4$) relationship between positive perceptions of carpooling and willingness to share transportation for environmental good. People who readily accept carpooling and see the value of using it are more likely to engage in environmental activities through transportation sharing;
2. perceived usefulness of carpooling due to conservation of natural resources (rho = 0.315): There is a clear but low positive relationship between perceptions of carpooling as a useful initiative for the environment and willingness to share. Those who perceive carpooling as applicable for natural resource conservation are more likely to say they are willing to share a vehicle with others;
3. perceived economic value of carpooling (rho = 0.351): There is a moderate ($0.4 < \text{rho} \leqq 0.7$) positive relationship between seeing financial savings in carpooling and willingness to take action for the environment through transportation sharing. People who see potential savings in carpooling are more likely to take action to protect natural resources.

Next, the rho-Spearman correlation analysis was undertaken between the variable "respondents' willingness to share with others" and the need to protect natural resources. Positive correlations were identified between the four variables (Table 3. RQ3.B; item numbering as shown in the table):

1. protecting depleting natural resources as a priority for sustainable consumption: The correlation value is rho=0.533, indicating a moderate positive relationship between these variables. People who are willing to share with others in the context of natural resource conservation tend to consider natural resource conservation a priority due to its crucial role in meeting basic needs;
2. pollution reduction and sustainable consumption: the correlation value is rho = 0.341, indicating a moderate positive relationship. People who are positive about sharing to conserve natural resources tend to be more accepting of sustainable consumption and caring for the environment, including reducing gas emissions and changing lifestyles;
3. companies' environmental activities: The correlation value is who = -0.272, indicating a clear but low negative correlation. Those inclined to share for the sake of the environment may be more skeptical about the intentions of companies and brands in their environmental activities. They often consider companies' actions for the environment to be incidental or indirectly driven by motivations related to trust risk or the company's profit goal;
4. lack of sufficient alternatives: The correlation value is rho = 0.218, indicating a weak positive relationship. Those willing to share for the sake of the environment may be more likely to feel that there needs to be more alternatives to give up products and services in favor of environmental protection because of the company's profit goal.

Variables (Table 3 RQ3, A and B) for which no significant statistical differences were observed do not provide convincing grounds for acceptance, but at the same time do not warrant rejection.

Table 3.
Nonparametric test results for research question RQ3 and RQ4

RQ3: Respondents' willingness to share with others with a view to conserving natural resources			**RQ4: Respondents' willingness to give up ownership in favor of access to various goods and services**	
A. general acceptance and evaluation of carpooling solutions?				
Items A:	**rho-Sperman**	**Significance (p)***	**rho-Sperman**	**Significance (p)*.**
1. Perceive the process of using this form of transportation (carpooling) positively, as not complicated (perceived ease of use)	0.308	0.002**	0.236	0.017*
2. The use of carpooling services is necessary for the protection of natural resources (perceived usefulness)	0.315	0.001**	0.316	0.001**
3. Carpooling saves money (perceived economic value)	0.351	< 0.001**	0.292	0.003**

Cont. table 3.

4. Carpooling is valuable and driven by concern for the environment (perceived intangible value)	0.054	0.593	0.124	0.218
5. Believe it is right to use and recommend this form of car transportation to friends (intention to continue).	0.157	0.117	-0.065	0.518
6. Carpooling will be increasingly used by travelers (perceived development)	0.191	0.055	0.220	0.027*
7. Believe that carpooling service providers will not intentionally harm users (misinformation, lack of fidelity to the idea) thus representing safe travel (trust in the service provider)	0.174	0.81	0.138	0.167
B. general perception of the need to protect natural resources?				
Items B:	**rho-Sperman**	**Significance (p)***	**rho-Sperman**	**Significance (p)***
1. Protecting depleting natural resources should be a priority for me/us, as nature provides us with our basic needs (e.g. water, clean air, land, forests) (sustainable consumption)	0.533	0.001**	0.304	0.002**
2. Reducing environmental pollution (fuel consumption, energy consumption and gas emissions) and leading a non-consumptive lifestyle should be obvious to me/us (sustainable consumption)	0.341	< 0.001*	0.348	<0.001**
3. The actions of companies/brands for the environment can be considered additional to, or are an indirect result of, their activities (sustainable company activities)	-0.272	0.006**	-0.119	0.236
4. There are not enough solutions for the customer (alternatives) to give up products and services, protecting the environment (value alternatives)	0.218	0.029*	0.157	0.117
5. Private ownership will be less attractive to the consumer in the coming years (social attitude)	0.171	0.087	0.266	0.007**
6. In the near future, fewer and fewer people will be able to afford their own car (economic attitude)	0.180	0.071	0.371	<0.001**
7. The transportation industry, including automobiles, is one of the main generators of pollution on earth (ccological/environmental attitude)	0.181	0.070	0.136	0.175

$^*\alpha = 0.05$; $^{**}\alpha = 0.01$.

Spearman's rank correlation coefficient (rho-Spearman) was also used to show significant statistical differences (RQ4) in the relationship between the willingness to give up ownership in favor of access to various goods and services and the overall acceptance and evaluation of carpooling solutions and the need to protect natural resources (Table 3). Spearman's analysis for items in group A (Table 3; RQ4), describing the overall acceptance of carpooling evaluation, showed positive correlations between four variables numbered 1-3 and 6. These include:

1. perceived positive ease of carpooling (rho = 0.236): The correlation value indicates a weak positive relationship ($0.2 < \text{rho} \leqq 0.4$). There is a correlation between the willingness to give up ownership of things on property and the perception of the carpooling use process as positive and not complicated.

2. perceived usefulness of carpooling (rho = 0.316): The correlation value indicates a clear but low positive relationship between these variables. The correlation value indicates a low positive relationship between these variables. Those who are more willing to give up ownership in favor of free access to goods and services are also more appreciative of the necessity of the carpooling initiative from a natural resource conservation perspective.
3. perceived economic value of carpooling (rho = 0.292): The rho value indicates a low positive relationship between these variables. Those willing to give up ownership in favor of free access to goods and services also consider carpooling a cost-effective travel method.
4. belief in the growing popularity of carpooling (perceived development) (rho = 0.220): The correlation value indicates a weak positive relationship between these variables. Those willing to give up ownership in favor of using shared goods and services are also more likely to predict an increase in the use of carpooling by travelers in the future.

Next, the rho-Spearman correlation analysis was undertaken for items in group B (Table 3; RQ4), describing the need for natural resource conservation. Positive correlations were identified between four variables numbered 1-2, 5-6 (Table 3. RQ4.B):

1. attachment to conservation of depleting natural resources (sustainable consumption) (who = 0.304): The correlation value indicates a clear but weak positive relationship between these variables. Those inclined to give up ownership in favor of using shared goods and services also prioritize protecting and depleting natural resources more due to their crucial role in meeting basic needs.
2. reducing environmental pollution and leading a non-consumptive lifestyle should be obvious (sustainable consumption) (who = 0.348): The correlation value indicates a moderate positive relationship between the propensity to give up ownership of things on property and taking for granted the importance of reducing environmental pollution by reducing fuel consumption, energy consumption and gas emissions, and leading a non-consumptive lifestyle.
3. private ownership will be less attractive to consumers in the coming years due to changing social bases (social attitudes) (who = 0.266): The correlation value indicates a clear but low positive relationship between the willingness to give up ownership of things on property and the belief that private ownership will be less attractive to consumers in the future due to changing social attitudes.
4. the belief that in the near future, fewer and fewer people will be able to afford to own a car will force people to give up ownership (economic attitude) (who = 0.371): The value of the correlation score indicates a moderate positive relationship between the variables. Individuals will give up ownership due to a lack of financial capability.

Variables (Table 3, RQ4, A and B) for which no significant statistical differences were observed do not provide convincing grounds for acceptance, but at the same time do not warrant rejection.

5. Summary, discussion and limitations

Based on the research conducted to understand the attitude of sharing (transportation, objects) with emphasis on the aspect of conservation of natural resources and the degree of giving up ownership of something, having free access to various goods and services, relative to the characteristics describing the profile of the respondent, it can be concluded that ‘gender’ and ‘age’ do not show a significant impact on the issues mentioned above. In contrast, the variable ‘residence’ indicates significant differences in behavior and perception of the issues studied. Reference can be made here to the study of Aguilera and Pigalle (2021), who pay particular attention to areas of low population density. In these areas, the challenge will be to give up the car or the propensity to share with others. Large urban areas have more transportation solutions. However, public awareness plays a key role in preventing environmental degradation.

The attitudes indicated above in the study were also related to general issues related to the acceptance of carpooling transportation solutions and the need to conserve natural resources. Selected items developed to accept carpooling transportation solutions (so-called ease of use, perceived usefulness, and economic value vs. willingness to act to protect the environment by sharing transportation (items A: 1-3, Table 3) indicate positive relationships between the variables studied. This means those who feel these values are willing to share transportation. A similar relationship was noted in the research works of Venkatesh et al. (2012), Kim et al. (2009), Cheng et al. (2020), Van der Heijden (2004), Sweeney and Sou (2001). In contrast, items 4-7 (i.e., intangible value, intention to continue, perceived development, and trust in the service provider) showed no significant differences between the variables. For these individuals, these values do not significantly impact sharing with others.

In the situation of the perceived need to protect natural resources, the items (so-called sustainable consumption, sustainable corporate actions, alternatives) and the propensity to share transportation (items B: 1-4, Table 3) indicate a positive relationship between the variables studied, i.e., the protection of natural resources is a priority for them, and sustainable consumption is a path that leads society in the right direction. Of course, this requires cooperation at the level of the customer - other entities in the environment, which provide an opportunity to replace non-environmental behavior with environmental ones. However, the other items 5-7 (i.e., social attitude, economic need, and environmental need) did not show significant differences between the variables. Attitude does not always reflect human behavior but is a good basis for change (Ajzen, 1991). However, the fact that the surveyed items did not show significant differences cannot be unequivocally said to reject them. Each variable covers a complex spectrum of needs, which can be difficult to verify on a small sample of subjects.

On the other hand, the items developed for acceptance of carpooling transportation solutions (i.e., use value, perceived usefulness, economic value, and perceived development vs. willingness to give up ownership of something while having free access to various goods and services (items A: 1-3 and 6, Table 3) indicate positive relationships between the variables studied (Dinesh et al., 2021). The remaining items 4-5 and 7 (i.e., intangible value, intention to continue, trust in the service provider) showed no significant differences between the variables (Arteaga-Sánchez et al., 2020; Correia, Viegas, 2011; Wu, Kim, 2019).

In the situation of feeling the need to conserve natural resources, the items (i.e., sustainable consumption, social and economic attitude) versus the willingness to give up ownership of something while having free access to various goods and services (items B: 1-2, 5-6, Table 3) indicate positive relationships between the variables studied (Falcone, Imbert, 2017). However, items 3-4 and 7 (i.e., sustainable company operations, alternative solutions, and environmental attitude) did not show significant differences between the variables (Lubowiecki-Vikuk et al., 2020; Ramirez et al., 2014).

In conclusion, the studies conducted make an important contribution to understanding consumer attitudes in the context of carpooling and environmental concerns. They point to the need for further research, particularly in how places of residence affect these issues, and underscore the importance of activities that promote a conscious and environmentally friendly approach to resource use.

Limitations of this paper are that the study is declarative in nature, focusing on two attitudes (sharing and opting out) that influence consumer behavior in terms of acceptance of shared transportation and the need to conserve the environment's natural resources. It is therefore necessary to check the actual behavior of carpooling users. It is also necessary to continue studying the reasons that support the legitimacy of carpooling and the special need to care for the environment. Among other things, it may be important to analyze the impact of regulations on the development and spread of carpooling. The article contributes to protecting natural resources through frugal/healthy living and conscious and efficient use of things. In addition, it helps raise awareness of the impact of decisions on the business, government, and social levels.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

TAX POLICIES OF COMMUNES AND THEIR CLASSIFICATION — THE EXAMPLE OF THE COMMUNES OF THE KUJAWSKO-POMORSKIE VOIVODESHIP

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Objective: The aim of the study is to present the typology of tax policies in the field of real estate tax, their application on the example of communes in the Kujawsko-Pomorskie Voivodeship, and then to indicate on this basis the directions in which tax policies are evolving.
Research method: Literature analysis, analysis of legal acts, comparative analysis.
Conclusions: Based on the presented typology of tax policies and empirical data collected in the territory of the Kujawsko-Pomorskie Voivodeship, it can be concluded that in the examined period communes changed their policies towards a passive policy. This happens both in the sphere related to residents and in the sphere related to economic activities. The change most often drifted towards a typically fiscal policy.
Limitations and challenges: In the process of calculating the indicators of commune activity in individual spheres proposed by the author, the fiscal importance of individual subjects of taxation was not taken into account. What is more, the proposed activity indicators do not take into account additional tax reliefs and exemptions introduced by communes. In subsequent works, extension of the analysis to include these elements may be considered.
Practical implications: The article proposes instruments for assessing the tax policies of communes and presents the basic trends in changes to these policies in recent years. The study has shown that communes have been limiting their activity in this field. It may constitute the basis for further research to explain the indicated trends, and in itself may be an impulse to change the system of local levies or the system of financing communes to such that would give communes greater freedom in creating their own tax policies.
Social implications: In essence, the tax policies of communes are to influence the inhabitants of a given territory as well as local entrepreneurs conducting business activity in this territory through the local taxation system. The study, which focuses on tools for assessing communes from the perspective of their tax policies, provides society with instruments to assess local government units and increase the transparency of policies in this area.
Originality: The article is a new, operationalized look at the classification of tax policies pursued by Polish communes. At the same time, on the basis of empirical data, the directions of changes in the local tax policies were indicated.
Keywords: local taxes, tax policy.
Article category: research paper, general review.

1. Introduction

In many developed countries, some public tasks are carried out by local governments. This is due, among other things, to the fact that local authorities are "closer" to the community and it is easier for them to respond to the needs of residents. At the same time, it is postulated that—by imposing selected expenses on local governments—they should be provided with a certain degree of financial independence. This, in turn, should be ensured by an appropriate structure of local incomes (Kornberger-Sokołowska, 2001). This is one of the reasons why most countries grant local governments certain incomes that are assigned to them and are considered their "own" income (Felis, Rosłaniec, 2017). A special place within this category is occupied by local taxes.

The concept of local taxation may be understood in various ways, but typically taxes of this kind have several characteristic features:

- they have little fiscal significance (Felis, 2012) (taxes that are more fiscally important are usually assigned to central budgets),
- they are characterized by low mobility of the tax base, which means that they provide a relatively stable source of income for local government units (Swianiewicz, Łukomska, 2016),
- their structure lets local government units partially shape the elements of tax technique.

It is worth noting here that these properties may contradict each other. As a rule, the power of local government authorities to shape taxation should allow them to influence the decisions of entities. At the same time, the small importance of local taxes and the low mobility of the tax base (related mainly to the fact that they are property taxes) limits this impact. The authorities' conscious shaping of tax technique elements, aimed at achieving specific goals, is called tax policy (Felis, Otczyk 2021). Scientific literature indicates that tax policy serves two functions, often attributed to taxes themselves (Dziemianowicz, 2011): fiscal and non-fiscal. The fiscal function is related to obtaining public funds (income) necessary to finance expenditure. The non-fiscal function, in turn, is related to the use of taxes to stimulate broadly understood socio-economic growth (Filipiak, 2015). Decisions regarding the direction of tax policy are most often difficult – the emphasis on non-fiscal functions usually brings about a reduction in income in the short term, although in the long term the effects may be opposite.

The conditions for shaping tax policy at the local level, as well as the approach of local government units to its creation, constitute interesting research problems. There is extensive scientific literature focusing on the theory of local taxes, the reasons for the specific shaping of local taxes by local governments[1], and the effects of the tax policy pursued[2]. An in-depth review of this literature is presented in the report by Swaniewicz and Łukomska (Swaniewicz, Łukomska, 2015) and by Agrawal (Agrawal et al., 2022).

This study uses the case of Polish communes and their limited power to levy taxes to propose and present a typology of tax policies pursued at the local level. There have been few considerations in the Polish scientific literature of the typology of tax policies, and they were often accompanied by analyses of local tax policies pursued by selected groups of communes.

The first significant publication from the perspective of the typology of tax policies in Poland was the publication by Miszczuk and Miszczuk (1995) entitled *An attempt at a typology of municipal tax policy (based on the example of the Lublin Voivodeship)*. They examined the communes of the Lublin Voivodeship in the field of real estate tax, agricultural tax, and tax on means of transport. They drew attention to two spheres affected by taxation: the sphere of economic activity and the sphere related to residents. If a given tax structure concerned business activity, they divided tax policies into stimulation policy (when the commune was active, i.e. it reduced tax rates, applied relief) and fiscal policy (when the commune was passive, i.e. it did not reduce tax rates, did not apply relief). When it came to taxing residents, they proposed a distinction between: populist policy (when the commune was active, i.e. it reduced tax rates, applied reliefs) and fiscal policy (when the commune was passive, i.e. it did not reduce tax rates, did not apply reliefs) (Miszczuk, Miszczuk, 1995).

Based on the above typology, Swianiewicz (1996) presented his approach to the classification of tax policies. The study covered the communes of the Piła, Lublin, Radom and Kraków Voivodeships in terms of property tax rates, agricultural tax, and means of transport tax. This author emphasized even more clearly the existence of two spheres influenced by tax policy – the sphere relating to residents and the one concerning economic activity. Ultimately, he distinguished four basic types of tax policy: liberal (in which the commune is active, i.e. it proposes tax preferences for both spheres), stimulating (in which the commune is active, i.e. it proposes tax preferences for the sphere related to business activity, and is passive towards other entities), populist (in which the commune is active, i.e. it offers tax preferences for the sphere related to residents, and is passive towards other entities), and fiscal (in which the commune is passive, i.e. it does not offer tax preferences to any group) (Łukomska, Swianiewicz, 2015) (Motek, 2022). This typology of tax policies was used for the considerations carried out in this article.

[1] Research on this topic was conducted, among others, in: Ashworth, 1997; Mouritzen 1989; Rose, Karran, 1987; Blom-Hansen, Monkerud Sørensen, 2006; Peterson, 1981; Janeba Osterloch, 2012.
[2] Research on this topic was conducted, among others, in: Riedel et al., 2020; Preston 1991; Bimonte, Stabile, 2015; Tidiane, Paty, 2020.

2. Tax policies of communes in Poland – legal conditions

Polish communes have been provided with several categories of income, which can be divided into: own income and supplementary income. This division is mainly used to consider the financial independence of local government units. At the same time, in Polish conditions this division is misleading. Supplementary income includes general and targeted subsidies from the state budget, and own income – income from local taxes, as well as the commune's share in national taxes. Polish communes participate in 39.34% of total income from income tax on natural persons residing in a given commune and in 6.71% of income tax on legal persons residing in a given commune. The indicated shares in central taxes are therefore considered as own income, although the scope of influence on income from this source is significantly limited (Felis, Rosłaniec, 2017).

As mentioned, one of the categories of own income of Polish communes is the category of local taxes and fees. Based on the criterion of the budget supplied, the following taxes can be identified in this category: real estate tax, agricultural tax, forestry tax, tax on means of transport, inheritance and donation tax, tax on civil law transactions, income tax in the form of the so-called tax card. From the perspective of the subject of the article, a much more important criterion on the basis of which taxes are sometimes assigned to the category of local taxes is the scope to which authorities can impact tax. In Polish conditions, it is not possible to fully transfer the power to create taxes to the municipal level. This is due to the fact that—in accordance with Art. 217 of the Constitution of the Republic of Poland—"the imposition of taxes and other public levies, the determination of entities, objects of taxation and tax rates, as well as the principles of granting reliefs and remissions and categories of entities exempt from taxes shall be effected by statute" (the Constitution of the Republic of Poland). It follows that all basic elements of tax technique must be regulated by law (Ofiarski, 2012). At the same time, a certain scope of that power may be transferred to local entities pursuant to Art. 168 of the Constitution of the Republic of Poland with the following wording: "local government units have the right to determine the amount of local taxes and fees within the scope specified in the act" (the Constitution of the Republic of Poland). The literature on the subject indicates that this power allows for shaping (modeling) tax burdens, and not establishing taxes (Kulicki, 2010).

The scope of tax pawer allocated to local authorities in Poland varies depending on the tax. There are three categories of power: full active power, limited active power and passive power. A brief description of taxes and the scope of local government rights in individual cases is provided in Table 1. Due to the subject of the article, the powers of local authorities in the field of real estate tax are particularly important - they can be briefly described as active tax power. It should be emphasized, however, that – although this is an active power in Polish terms – it is largely limited. It includes primarily the right to set tax rates at a level lower than that adopted by law (lower than the so-called maximum rates). Moreover, within the categories of taxable objects imposed by the legislator, it is possible to introduce further distinctions. Moreover, the commune council has the right to introduce additional subject exemptions. At the level of the tax authority, it is possible to write off tax arrears, divide into installments and defer tax payments.

Table 1.
The scope of tax power of Polish communes in relation to local taxes

Tax	Power at the level of the commune council.[3]	Power at the level of the tax authority[4]
Active tax power in the broad sense (full power)		
property tax	- lowering rates (relative to maximum rates), - introducing additional, non-statutory exemptions	- cancellation of tax arrears, - payment in installments, postponement of payment, exemption from the obligation to collect, limitation of collection
agricultural tax	- lowering the rate (indirectly - by lowering the average price of rye), - reducing the tax base by assigning a commune or part of it to a specific one, - introducing additional, non-statutory reliefs and exemptions	
forest tax	- lowering the rate (indirectly - by lowering the average price of wood) - introducing additional, non-statutory exemptions	
tax on means of transport	- lowering rates (relative to maximum rates), - introducing additional, non-statutory reliefs and exemptions	
Active tax power in the narrow sense (limited power) [5]		
tax on civil law transactions	none	- cancellation of tax arrears, - payment in installments, postponement of payment, exemption from the obligation to collect, limitation of collection
income tax in the form of a tax card	none	
inheritance and donation tax	none	
Passive tax power		
share in personal income tax	none	none
share in corporate income tax	none	none

Source: own study based on: Filipiak, 2015; Wołowiec, Reśko, 2012; Ustawa o podatkach i opłatach lokalnych; Ustawa o podatku rolnym; Ustawa o podatku leśnym; Ustawa o podatku od spadków i darowizn; Ustawa o podatku od czynności cywilnoprawnych; Ustawa o zryczałtowanym podatku dochodowym od niektórych przychodów osiąganych przez osoby fizyczne.

[3] Introduced by resolutions of the Commune Council.
[4] Introduced by decisions issued by the tax authority under the Tax Ordinance Act.
[5] In these cases, the tax authority is the Head of the Tax Office, who must obtain consent to use a specific instrument in a specific case from the commune head, mayor (city president) (Etel, 2015).

3. Study plan

The aim of this study is to present an operationalized typology of tax policies that could, in practice, be used to classify the policies used by Polish communes and then enable a diagnosis of current practices and their evolution. The article may constitute the basis for further research aimed at answering, among others, the research questions indicated above and already discussed in the scientific literature.

The study was designed as follows:

1. Based on the existing literature on the subject, a selected classification of tax policies in the field of real estate tax was proposed.
2. Based on the analysis of resolutions regarding real estate tax rates adopted by commune councils of the Kujawsko-Pomorskie Voivodeship (144 administrative units with appropriate powers) in the 2018-2022 period, a method of operationalizing the selected classification was proposed. The main challenge was to select elements that enabled the construction of local tax policy indicators – detailed but, at the same time, based on available information.
3. The tax policies of communes in the Kujawsko-Pomorskie Voivodeship in 2018-2022 were classified and the directions of changes that occurred in the analyzed period were indicated.

The proposed study focused on real estate tax as the most fiscally important and most expressive instrument of the commune's tax policy – in Polish conditions there is no other local tax that could be modified by local authorities and would be important from the point of view of the commune's budget. (Guziejewska, 2016). At the same time, the analysis was limited to the tax rates used in the surveyed communes – the author decided to omit the tax policies of communes pursued by introducing additional, non-statutory reliefs and exemptions. The issue of the fiscal significance of individual isolated solutions was also omitted. The indicated simplifications of this study were related to the difficulty in obtaining appropriately detailed information for the proposed classification[6].

Within the scope of property taxation, two spheres have been distinguished: the sphere related to the population (residents) – elements of real estate not related to economic activity, and the sphere related to economic activity. Unlike the research proposed by the previously mentioned authors, this study proposes an extended view of both spheres. So far, when talking about the sphere related to residents, i.e. real estate not related to business activity, the research

[6] An interesting source of information on the tax policie of communes are reports on the implementation of the municipal budget Rb-27S (report on the implementation of the budget revenue plan of a local government unit), used, among others, by Swaniewicz and Łukomska (2017). Their significant limitation, however, is that they do not distinguish between reductions in tax incomes caused by individual instruments, broken down into instruments dedicated to entrepreneurs and instruments dedicated to residents. Therefore, from the perspective of the classification adopted in the article, they could not be used.

covered rates for residential buildings. As part of the study, it was proposed to analyze tax rates applied by individual communes related to:

- residential buildings,
- buildings other than residential buildings, but at the same time not related to business activity – only rates dedicated to the typical population were separated and analyzed, rates dedicated to public benefit organizations were omitted. The study showed that communes most often distinguished rates in this category for garage buildings, summer houses, basements/other places for storing e.g. fuel, and other buildings not related to business activities. As part of the study, the average rate dedicated to these four subcategories of non-residential buildings was calculated and this average was used in the further part of the study;
- land other than land related to business activities. Also in this case, communes differentiate rates into different categories – most often, if they introduce additional rates, other than general rates (applicable to land other than that related to business activity) and other subcategories indicated in the Act, these are separate rates for land related to recreational buildings/ summer resorts. For this reason, the study assumed that each commune would be assigned a standard rate and—if applicable—a rate for this type of land. If a separate rate does not exist, the rate for residential buildings is assigned to recreational land. Finally, the average tax rate was calculated for buildings and land related to housing/recreational use. For each of these three elements of the real estate tax system, the deviation of the applicable rate (or average rate) from the maximum rate was determined. The level of deviation, expressed as the share of the deviation (the difference between the maximum rate and the applied rate) in the maximum rate, may range from 0 to 1. This level is hereinafter referred to as the rate reduction level. Then, a general indicator dedicated to the discussed sphere was proposed – this indicator is the average of the three indicators of the rate reduction level proposed above and will be hereinafter referred to as the commune activity indicator for the "residents" sphere.

Next, the study addressed the area of real estate tax related to business activity. This sphere can be assessed from the perspective of several rates/factors. This applies to the following taxable items:

- buildings related to business activities or occupied for business purposes – due to the application of the highest maximum rate, it seems to be the element of greatest fiscal importance for most communes where entities conducting such activities are located,
- land related to business activity – this category was also distinguished by the legislator, and communes do not distinguish between types of business activity in order to propose different tax rates for different types of activity,
- structures – it is worth noting here that structures are taxed under real estate tax only if they are related to business activity. Otherwise, they are not subject to this tax.

In the case of taxable items related to business activity, communes, as a rule, do not apply additional distinctions, so each of these elements can be simply characterized by the rate reduction level. It is calculated in the same way as the one above, i.e. the share of the deviation (the difference between the maximum rate and applied rate) in the maximum rate, may have a value in the 0-1 range. As it turned out during the study, all communes completely ignored the existence of a rate on buildings as a possible instrument of tax policy – some communes only introduced a lower rate for buildings related to water supply. Due to the commonness of such behavior, the author decided to exclude this element from the analysis. Therefore, a general indicator dedicated to the discussed sphere was proposed – the average of the two above-proposed indicators of the rate reduction level. It will be hereinafter referred to as the commune activity indicator for the "economic activity" sphere.

As part of the next stage of this study, the activity indicators of communes were operationalized for the "residents" sphere and for the "economic activity" sphere. It was assumed that tax policy in a given area can be considered active if the activity index in this area is 0.25 or more. On this basis, each commune in the Kujawsko-Pomorskie Voivodeship was first assigned a tax policy type, and subsequently, following the classification adopted in the work, a category for a given year in each of the two indicated areas. That is, the tax policy of each commune was classified into one of the following categories:

- fiscal tax policy – a policy under which the commune is not active in the "residents" sphere or in the "economic activity" sphere (both activity indicators lower than 0.25),
- populist tax policy – a policy under which the commune is active in the "residents" sphere, but is not active in the "economic activity" sphere (activity indicators: higher than or equal to 0.25, lower than 0.25, respectively),
- stimulating tax policy – a policy under which the commune is not active in the "residents" sphere, but is active in the "economic activity" sphere (activity indicators: lower than 0.25, higher than or equal to 0.25, respectively),
- liberal tax policy, a policy under which the commune is active in the "residents" sphere and in the "economic activity" sphere (both activity indicators are higher than or equal to 0.25). The next stage of the study was the analysis of tax policies from the perspective of the frequency of occurrence of individual types, as well as from the perspective of the directions of policy changes in the examined period between 2018 and 2022.

4. Test results

The analysis of the resolutions of the communes of the Kujawsko-Pomorskie Voivodeship, and in particular the analysis of the tax rates used by the communes and the additional distinctions into subcategories of taxable objects introduced by the communes (in comparison to those introduced by the legislator), allowed for the collection of interesting research material. Due to the extensiveness of the original tables, including those leading to the calculation of activity indicators of each commune in each of the examined years, within two spheres, only selected summaries are included in the article.

The summary of the first stage of the study is showcased in Figures 1 and 2. Figure 1 presents the variability over time of the average commune activity indicator[7] for all communes for the "residents" sphere. In turn, Figure 2 presents the variability over time of the average commune activity indicator for all communes for the "economic activity" sphere. In order to deepen the analysis, average activity indicators were determined for the communes of the studied voivodeship in general, for rural communes, for urban-rural communes and for urban communes excluding poviat cities, as well as for poviat cities.

First of all, the decreasing trend draws attention – it means that in each type of commune and in each of the analyzed zones there is a reduction in the activity of communes (measured by activity indicators). The most significant decline occurred in the small group of urban communes excluding poviat cities and poviat cities. The disproportion between spheres of activity is also noteworthy. Within the "residents" sphere, the average activity is much higher; on average, communes in 2018-2021 met the activity criterion, as the average activity index was higher than 0.25. However, in 2022 the average for all communes was less than 0.25. Only the average activity rates in rural communes remained above 0.25 throughout the entire period under study.

In the sphere of "economic activity" throughout the period, on average, communes did not present an active attitude, because in each category of communes the activity index did not reach the level of 0.25.

The next stage of the study was to assign the policies pursued by individual communes to the appropriate category within the proposed classification. A general picture of how diversified the approach of communes to tax policy is in both spheres is depicted in Figure 3 and Figure 4. The first figure shows the tax policies of individual communes in the studied voivodeship in 2018, and Figure 4 presents the policies in 2022.

[7] As indicated earlier, the commune activity indicator is understood as the average value of deviations of the rates applied by the commune in a given sphere from the maximum rates applicable in a given year.

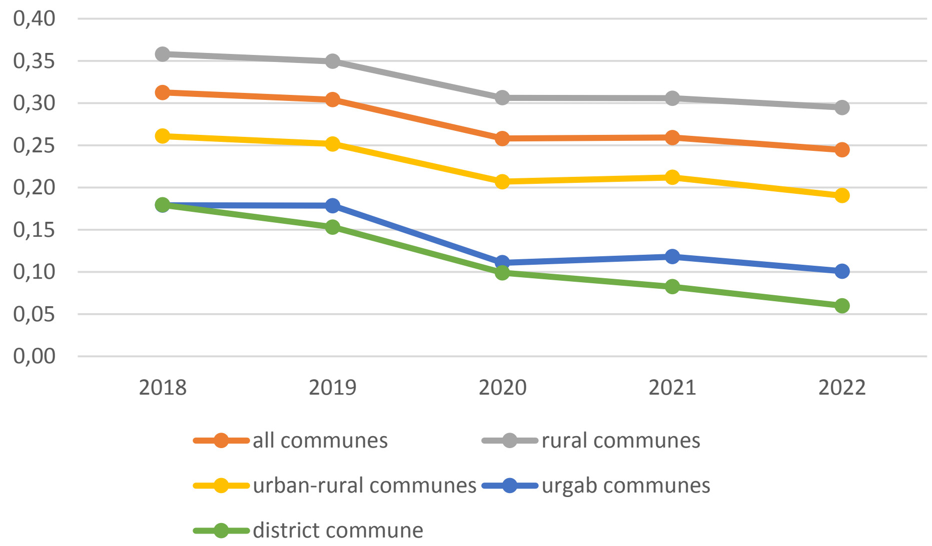

Figure 1. Average activity rate of communes of the Kujawsko-Pomorskie Voivodeship in 2018-2022 in the "residents" sphere, divided into commune categories.

Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

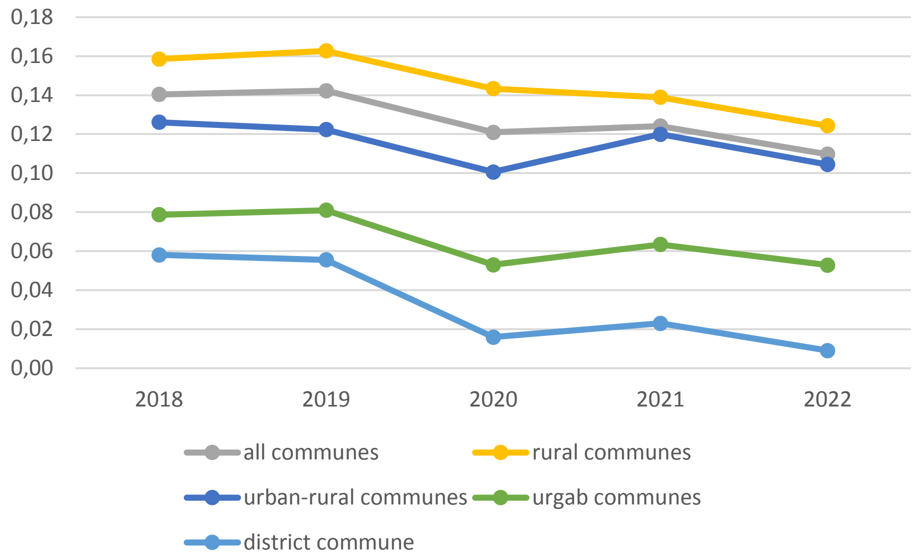

Figure 2. Average activity rate of communes of the Kujawsko-Pomorskie Voivodeship in 2018-2022 in the "economic activity" sphere, divided into commune categories.

Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

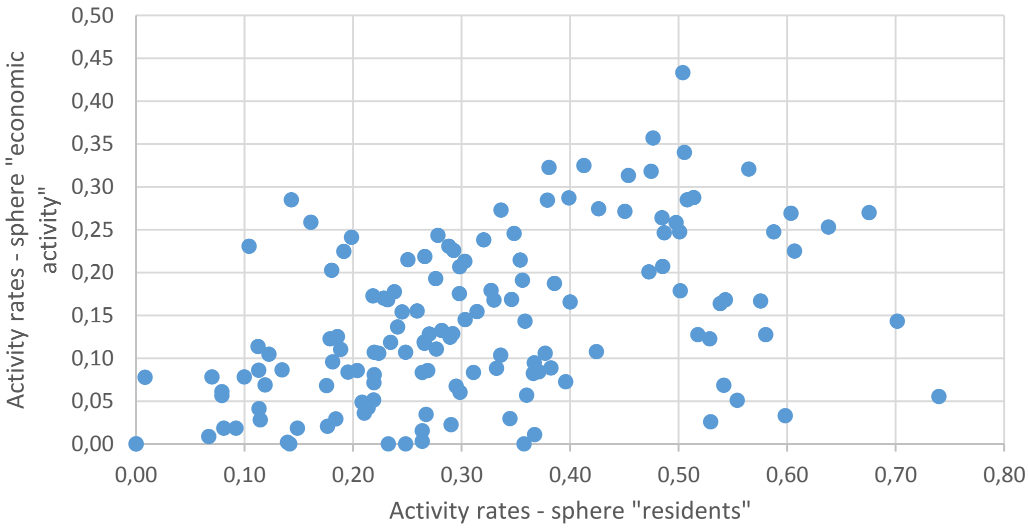

Figure 3. Activity rates in individual communes of the Kujawsko-Pomorskie Voivodeship in 2018.
Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

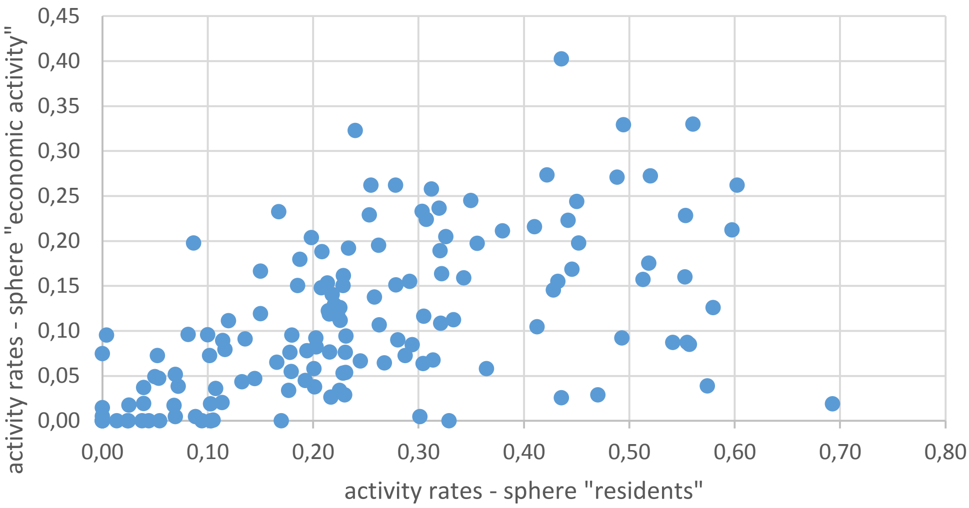

Figure 4. Activity rates in individual communes of the Kujawsko-Pomorskie Voivodeship in 2022.
Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

The research results presented in Table 2 and Table 3 allow for an in-depth analysis of tax policies pursued by communes. Table 2 shows the number of communes that demonstrated an active policy (activity index equal to or higher than 0.25) in the "residents" sphere, and what was the number of communes showing activity in the sphere of "economic activity".

Table 2.
Types of tax policy (preliminary classification) used by communes of the Kujawsko-Pomorskie Voivodeship in 2018 and 2022

Policy type	tax policy - "residents" sphere		tax policy - "economic activity" sphere	
	2018	2022	2018	2022
passive	54	84	122	133
active	90	60	22	11

Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

The presented graphic and numerical data allowed the author to conclude that passive policy prevailed in the communes of the Kujawsko-Pomorskie Voivodeship. Most communes (90) pursued an active policy only in 2018 in the "residents" sphere, while a passive policy was pursued in this sphere by 54 communes in this period. Over time, also in this area, communes pursuing a passive policy began to prevail (in 2022, there were 84 such communes). In the area of "business activity", the passive approach dominated throughout the period under study, but over time the number of communes deciding on this approach increased.

It seems exceptionally interesting how communes combine their approach to tax policy in the two spheres – the classification proposed in the work helps assess of the state of affairs from this angle. The analysis is presented in Table 3. As it turns out, most communes in 2018 adopted a populist policy, followed by a fiscal policy, 20 communes chose a liberal policy, and only two communes chose a stimulating policy. In 2022, there were significant changes in the policies adopted by communes. Most communes decided on fiscal policy, second in order was populist policy, only ten units pursued a liberal policy, and a stimulating policy was pursued by one commune.

Table 3.
Types of tax policy (according to the selected classification) used by communes of the Kujawsko-Pomorskie Voivodeship in 2018 and 2022

Types od tax policy	2018	2022	2022:2018
fiscal	52	84	162%
stimulating	2	1	50%
populist	70	49	70%
liberal	20	10	50%

Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

In order to verify whether the change in the structure of applied tax policies is only a matter of some communes changing their tax policy from a non-fiscal one to a fiscal one, the direction of policy change in the communes of the Kujawsko-Pomorskie Voivodeship in the years 2018-2022 was also examined. The results are presented in Table 4. The study shows that 84 communes remained in the same tax policy category both in 2018 and 2022.

Table 4.
Directions of changes in tax policies applied by communes of the Kujawsko-Pomorskie Voivodeship in 2018 and 2022

Direction of changes in tax policies	Number of communes
fiscal → fiscal	48
fiscal → populist	4
liberal → fiscal	2
liberal → liberal	8
liberal → populist	9
liberal → stimulating	1
populist → fiscal	33
populist → liberal	1
populist → populist	36
stimulating → fiscal	1
stimulating → liberal	1

Source: own study on the basis of the collected empirical material (resolutions of Commune Councils).

In the remaining communes, there were changes – the vast majority of them were changes towards less activity in the field tax. Only a few communes increased their activity, i.e. in one case a commune changed from a populist policy to a liberal policy, four communes moved from a fiscal policy to a populist policy and eight communes maintained the application of liberal tax policy.

5. Summary

The article proposed instruments for assessing the tax policies of communes in the field of real estate tax and presented the basic trends in changes to these policies in recent years. The analysis was based on empirical data collected in the territory of the Kujawsko-Pomorskie Voivodeship. The research conducted in this work allows the author to conclude that during the period under study there were significant changes in the tax policies pursued by communes. This happens both in the sphere related to residents and in the sphere related to economic activities. The change most often drifted towards a typically fiscal policy. It is reasonable to undertake further research that would indicate the causes of such drastic changes.

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SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

CROSS-BORDER DISTRIBUTION OF INVESTMENT FUNDS

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Purpose: The aim of this article is to present the evolution of the European investment fund market in the context of its cross-border distribution and the challenges it faces.
Design/methodology/approach: Legal acts, reports and data published by international institutions involved in investment fund market research, such as the European Fund and Asset Management Association and PriceWaterhouseCoopers, have been analysed.
Findings: There were differences in the regulation of cross-border distribution of investment funds between Member States and between UCITS funds and alternative funds. The harmonisation of rules and the strengthening of cooperation between regulators in different EU countries have contributed significantly to the development of cross-border distribution of investment funds. These regulations also develop similar cross-border distribution rules for the two types of funds mentioned. The share of domestic funds in the structure of the total assets of European investment funds, although dominant, is gradually decreasing in favour of an increase in the share of assets held by cross-border funds distributing their shares or units in other EU countries and outside the EU. The level of development of cross-border distribution has increased, as measured by the ratio of the average number of registrations per cross-border fund. This demonstrates the significant impact of the investment fund market on EU competitiveness and development. It also confirms the positioning of investment funds established under EU law as a global brand, no longer limited to UCITS funds but also to alternative funds (AIFs), which are increasingly used for cross-border distribution. The still dominant position of Luxembourg as the country of choice for cross-border offered investment funds is no longer as strong as before, the position of other Member States (Ireland, France) is slowly increasing.
Practical implications: The development of EU legislation on cross-border investment funds may pose a significant challenge to smaller, local investment fund markets. Institutions setting up and promoting investment funds should consider the growing interest of non-EU investors.
Social implications: Cross-border distribution of investment funds can increase retail investors' access to a category of funds that is sometimes poorly served in domestic markets, particularly in the growing market for ESG-based sustainable funds.
Originality/value: The article presents the evolution of cross-border distribution of investment funds, highlighting regulatory changes, market developments and structural changes in the countries chosen to host cross-border investment funds.
Keywords: investment funds, cross-border distribution, finance, UCITS, AIF.
Category of the paper: Research paper.

1. Introduction

Strengthening the development of capital markets and cross-border financial integration are important elements of European integration and have a direct impact on increasing the EU's competitiveness in global markets. The long history of building the EU capital market goes back to the free movement of capital, which was already implemented by the Treaty of Rome in 1957 (Véron, Wolff, 2016). The 2015 Green Paper (European Commission, 2015) underlined the need for a Capital Markets Union, which should aim to create a single capital market for all Member States by removing barriers to cross-border investment in the EU and strengthening links with global capital markets. This should be complemented by the harmonisation of the regulatory framework for financial services and effective investor protection.

One of the important and significant participants of the capital markets, directly affected by the free movement of capital, are the well-known and widely operating investment funds. Their role in the process of accumulation of social savings is becoming increasingly important, which increases the influence of funds on the processes taking place on the financial market and, consequently, in the sphere of the real economy (Mroczkowski, 2011). The level of development of the investment fund industry varies in different countries and regions of the world and depends on the level of development of their capital markets.

The assets of the global investment fund market were estimated at EUR 60.8 trillion at the end of 2022 (EFAMA, 2023). The largest assets were accumulated by investment funds in the United States, accounting for almost half of the global investment fund assets market (ICI, 2023). The rapid growth of the US fund market has largely been driven by its popularity in US pension plans and the popularity of ETFs. The next largest market in terms of net asset value is the European market, which is primarily driven by the popularity of funds known as UCITS, which have EUR 18.5 trillion in assets and account for more than 30% of the global investment fund market (EFAMA, 2023).

The specificity of the European investment fund market is not only related to the successive stages of market integration, the development of funds at national level or the popularity of funds among institutional investors. The increase in the supply side of available investment vehicles is influenced by the cross-border offering of investment funds. Of particular importance for the development of the European investment fund market is cross-border distribution outside the country in which the fund is domiciled and providing investors with access to funds that are regulated transparently and diversified, e.g., geographically, or politically.

The aim of this article is to present the evolution of the European investment fund market in the context of its cross-border distribution and the challenges it faces.

2. Materials and methods

The article focuses on investment funds established under European Union law. For the purposes of the article, legal acts, recent materials, and reports published by international institutions involved in investment fund market research are analysed. These include the European Fund and Asset Management Association (EFAMA) and PriceWaterhouseCoopers (PwC). The time range is dependent on the data available and covers the years 2000-2023 (Q2). The ratio of the number of registrations per cross-border fund was chosen as a measure of the level of development of cross-border distribution of investment funds calculated according to formula (1):

$$Ratio\ CBFR = \frac{CBR}{CBF} \tag{1}$$

where:
CBR – Number of cross-border registrations,
CBF – Number of cross-border funds.

The paper presents the main aspects related to the specificity of investment funds established under EU law by presenting the basic types of funds. For the purposes of the article, cross-border distribution of investment funds is defined in order to present the evolution of cross-border distribution in the next step. It then examines the market for investment funds, with a particular focus on the market for cross-border investment funds. It identifies the European countries where these funds are most often domiciled and the regions to which they are most often distributed. The final part presents conclusions, limitations, and possible directions for further analysis.

3. Results and Discussion

3.1. Investment funds established in the EU

In general, investment funds can be defined as specialised institutions that pool the funds of various categories of investors by offering them in exchange securities or units for investment in various asset classes (Krupa, 2008). While independent participation in financial market operations requires overcoming barriers related to insufficient resources of capital, knowledge or time, investment through investment funds is supposed to reduce the disproportion between unused capital and the possibilities of its placement on the financial market (Dziawgo, D., Dziawgo, L., 1994; Dyl, 2001). Investment funds, if they existed at all, developed independently in individual European countries. The origins of the single market for investment funds can be traced back to the UCITS Directive adopted in the 1980s (Directive 85/611/EEC, 1985). Since then, the EU investment fund market has undergone a number of changes in terms of regulatory evolution in order to protect investors, create and strengthen the single financial market and safeguard its integrity and stability (Perez, Borowski, 2018). These changes have led to the development of a number of directives, which have been transposed into the national legislation of the Member States and EU regulations.

The main types of investment funds operating in the EU are named after EU directives. These include open-ended investment funds, which are referred to as UCITS (Undertakings for Collective Investment in Transferable Securities) funds, as harmonised by the successive UCITS Directives I to V (Directive 85/611/EEC, 1985; Directive 2001/107/EC, 2022; Directive 2001/108/EC, 2002; Directive 2009/65/EC, 2009; Directive 2014/91/EU, 2014). These funds were primarily aimed at retail investors. Initially, other types of funds that were not harmonised with the UCITS Directive (e.g., closed-end investment funds, real estate funds, hedge funds, private equity funds) were referred to as non-UCITS (Krupa, 2008). This group included funds with a wide variety of organisational forms and investment strategies, often regulated individually by each Member State. The diversity of non-UCITS funds made it difficult to regulate them at EU level. Eventually, the AIFM Directive (Directive 2011/61/EU, 2011) brought the management companies of these funds under the regulatory umbrella and the funds previously referred to as non-UCITS were collectively referred to as Alternative Investment Funds (AIFs). These funds were mainly targeted at professional investors.

Figure 1. shows the net asset value (NAV) of investment funds in the European market from 2000 to mid-2023 by fund group according to the applicable regulatory designation.

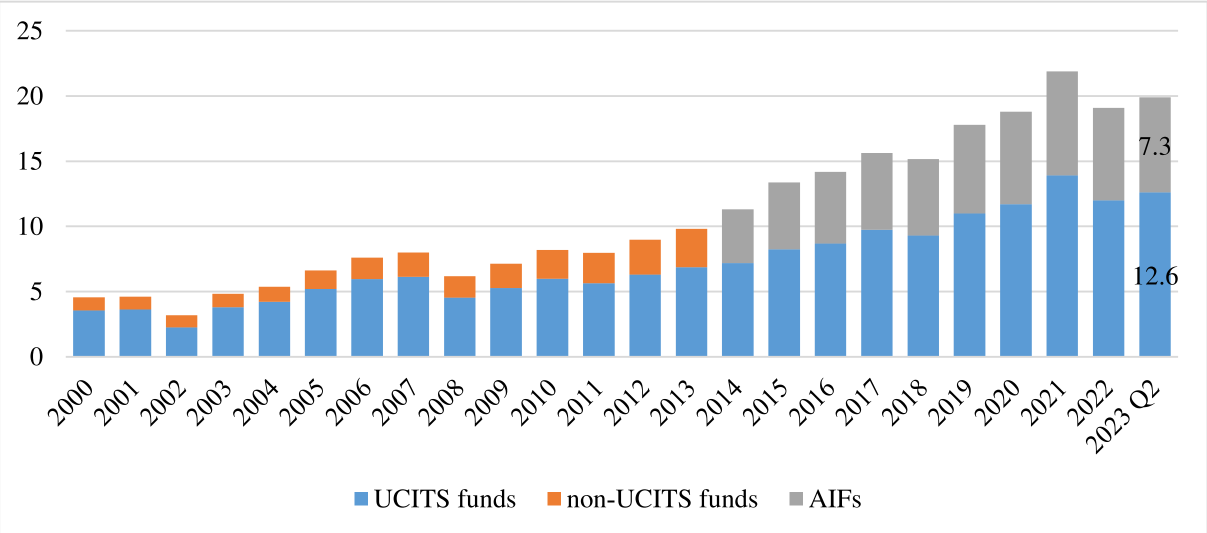

Figure 1. Net Assets Value of investment funds industry in Europe in the period 2000-2023, EUR trillions.

Source: own calculation based on (Worldwide…, 2009; EFAMA, 2019; EFAMA, 2023).

The intense development of the European investment fund market after the financial crisis of 2007-2008 is particularly evident in the increase in net assets of funds, firstly of the non-UCITS group and then of alternative funds. The market for UCITS funds also developed harmoniously. For both groups of funds, the intensity of the development of this market was influenced by the market activities of the distributors of the shares or units and by the rules governing their cross-border distribution.

3.2. Definition and development of cross-border distribution of investment funds in the EU

A key element in strengthening the single market for investment funds in the EU has been to improve their cross-border distribution. For the purposes of this article, cross-border distribution of an investment fund is defined as the sale of units or shares of UCITS or AIFs outside the home country, i.e., the country where the fund is domiciled, to other countries, referred to as host countries.

Cross-border distribution of investment funds mainly concerned UCITS funds (Krupa, 2010), which were mainly distributed by banks with capital links to the fund management company in the countries where they were established (Perez, Borowski, 2018). UCITS funds were subject to the single passport principle, under which open-ended fund units or shares could be distributed throughout the Community without the need to obtain separate authorisations in host countries. Subsequent UCITS regulation did not address the problem of excessive cross-border distribution costs, due to high compliance monitoring costs in individual host countries. It was not until UCITS Directive IV (Directive 2009/65/EC, 2009) that this process was simplified. Solutions for the cross-border distribution of UCITS investment funds included the introduction of the European Management Company Passport (MCP). This allowed a company authorised in one EU country to launch and manage UCITS funds domiciled in a country other than that of the management company. Cross-border pooling of funds also became possible. Under UCITS Directive V (Directive 2014/91/EU, 2014), a single licence was granted to UCITS fund depositaries.

For the second group of funds, initially known as non-UCITS, it was possible to distribute their shares or units within the EU and in third countries. However, this process was time-consuming, costly, and often complicated, as each country's legislation required such a fund to meet local legal requirements for distribution. For example, many jurisdictions had different rules on minimum subscriptions, fees and commissions, investment limits, disclosure requirements or tax issues. It was not until the AIFM Directive (Directive 2011/61/EU, 2011) that a single licensing regime for AIF fund managers and their depositaries was introduced.

There are two types of passports for both groups of funds. The management passport allows either a UCITS management company or an AIF manager (AIFM) authorised in one Member State to operate in other Member States. The second type is the marketing passport, which allows a UCITS or AIF authorised by a national competent authority in one Member State to market funds on a cross-border basis in other Member States without having to obtain a separate authorisation.

Considering the UCITS and AIFM Regulations, the European Commission conducted a consultation on the main barriers to cross-border marketing of investment funds in the EU (European Commission, 2016). The results of this consultation were used to develop a further framework to increase the cross-border movement of European capital. Despite the changes introduced, in most Member States funds are mainly distributed domestically. In the structure of total European investment fund assets, the share of domestic funds decreased from 58% in 2011 to 46% in 2022. The share of assets held by funds distributing their units or shares in other EU countries increased from 22% to 28% over the period, and the share of assets held by funds distributing their units or shares outside the EU increased from 21% to 26% (Figure 2).

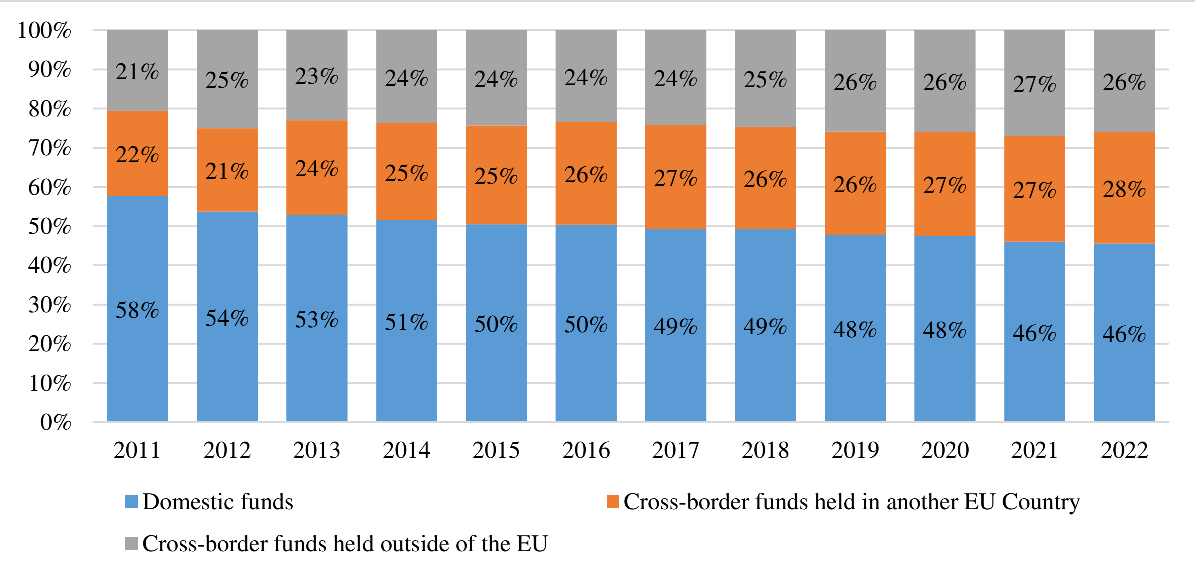

Figure 2. Structure of the distribution of assets of European investment funds from 2011 to 2022 (percentage of total net assets).

Source: own calculation based on (EFAMA, 2019; EFAMA, 2023).

Subsequent legislative proposals and proposed solutions were widely discussed (Gargantini, Noia, Dimitropoulos, 2018). These concerned both the directive regulating UCITS funds and the directive regulating alternative investment fund managers (European Commission, 2018). In the further developments and consultations, a kind of common, cross-sectoral standard for investor protection began to emerge, which could form the basis for future development and integration of EU legislation (Annunziata, 2019).

The result of the work on cross-border fund distribution is a Directive, complemented by a Regulation. The Directive (Directive (EU) 2019/1160, 2019) amends Directives 2009/65/EC and 2011/61/EU in relation to cross-border distribution by undertakings for collective investment. It aims to ensure a level playing field for investment funds by removing restrictions on the free movement of fund units or shares within the EU. At the same time, it seeks to enhance the harmonisation of investor protection through solutions aimed at removing the barriers identified in this area resulting from divergent regulatory and supervisory practices in Member States. The Regulation of the European Parliament and of the Council on facilitating the cross-border distribution of collective investment undertakings (Regulation (EU) 2019/1156, 2019), which applies to separately regulated alternative funds (EuVECA, EuSEF, ELTIF) in addition to UCITS funds, sets out additional rules and procedures. Together, the Regulation and the Directive aim to coordinate the conditions for fund managers operating in the Internal Market and to facilitate the cross-border distribution of the funds they manage. The Regulation also complements the advertising information provisions of the UCITS Directive and extends their application to AIF managers. It should be noted that the European Securities and Markets Authority (ESMA, 2022; ESMA, 2023) has developed a supplement to the advertising information rules. Advertising information should, inter alia:

- be recognisable as information or advertising content and describe the risks and rewards associated with the purchase of units,
- be presented in a fair, transparent, and non-misleading manner,
- indicate where and how existing or potential investors can obtain a summary of investors' rights,
- does not contradict or detract from the information contained in the fund's prospectus or key investor information document (KIID).

3.3. The market for cross-border distribution of investment funds established in the EU

Between 2002 and 2022, the number of cross-border investment funds increased from 3750 to 14607 and the number of cross-border registrations in 2022 was more than five times higher than in 2002 (Figure 3).

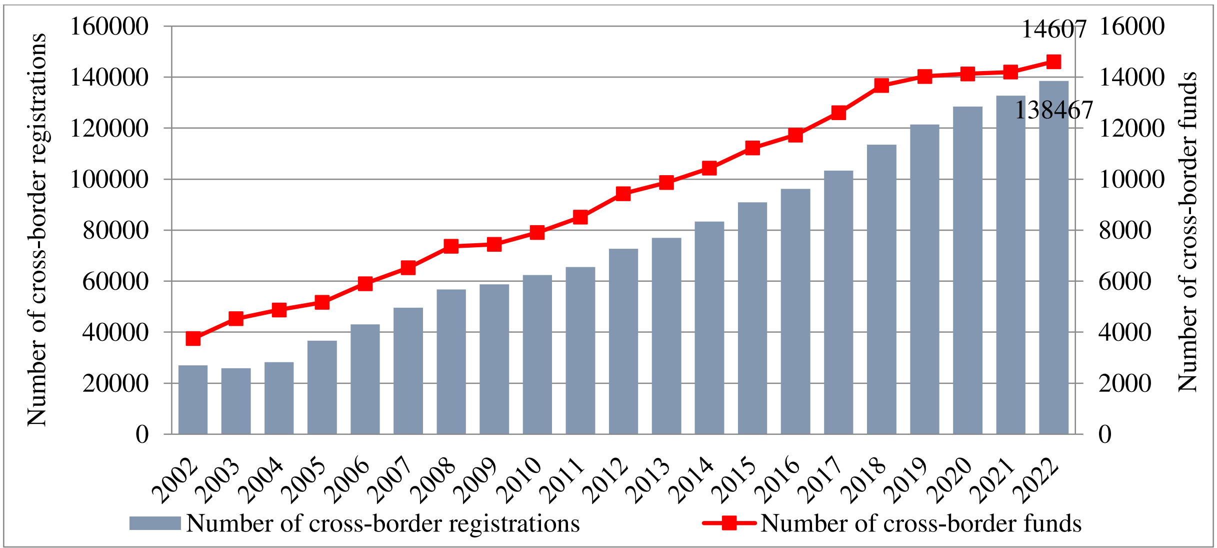

Figure 3. Number of cross-border registrations and number of cross-border funds in 2002-2022.
Source: own calculation based on (PWC 2009), (PWC 2019), (Saint-Mard, Glover, Yazdani, 2023).

The Commission considers cross-border funds to be those where a fund is distributed in one or more Member States (host countries) outside the domestic market of its manager and domicile (EUROPEAN COURT OF AUDITORS, 2022). It therefore excludes so-called round-trip funds (artificially traded funds) sold by domestic rather than foreign asset managers.

A measure of the level of development of cross-border distribution can be the ratio of the number of registrations per cross-border fund (Ratio CBFR), calculated according to formula (1). The following figure shows the ratio of the Ratio CBFR from 2002 to 2022 (Figure 4).

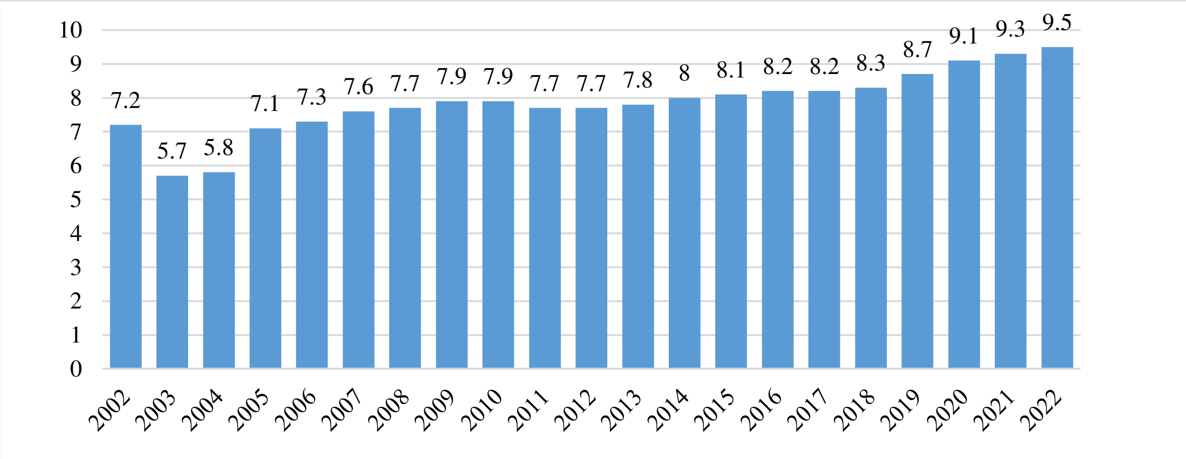

Figure 4. Ratio CBFR from 2002 to 2022.

Source: own calculation based on (PwC, 2009; PwC, 2019; Saint-Mard, Glover, Yazdani, 2023).

At the end of 2022, a cross-border fund was registered in more than nine countries on average. The increase in this indicator over the period shows that the number of cross-border registrations (Figure 3) grew faster than the number of cross-border investment funds.

Another snapshot of the development of the market for the cross-border marketing of investment funds is provided by the countries in which cross-border funds are domiciled. Financial institutions, which are the promoters and originators of investment funds, select specific countries as the place of registration of investment funds (home countries) and the countries to which the units or securities of these funds are distributed (host countries). Since the beginning of cross-border distribution of investment fund units or shares, Luxembourg and then Ireland have led the way in terms of domicile (Krupa, 2010). Initially, cross-border distribution only applied to UCITS funds; following regulatory changes, distribution of AIFs became possible. According to PwC (2023), cross-border UCITS funds still dominate, with AIFs accounting for 8.4% of the total number of funds distributed cross-border. The spatial structure of the European investment fund industry, with a focus on Luxembourg and Ireland, is analysed by Wojcik, Urban and Dörry (2022). Using financial and economic geography, the authors show how these countries have become leading destinations for investment funds. They emphasise that while Luxembourg and Ireland have become more important because of European financial integration, this has been driven by US banks and asset managers rather than European firms. In 2022, 24 of the 64 largest companies promoting and creating funds in Europe were from the US, 13 from the UK and six from Switzerland (PwC, 2023). Strengthening the development of the cross-border distribution market is also linked to the fact that investment funds are part of broad cross-border linkages classified as non-bank financial institutions. Cross-border linkages between non-bank financial institutions and banks have also increased significantly in recent years (Aldasoro, Huang, Kemp, 2020), supporting the development of both. The choice of domicile for investment funds by foreign investment firms is primarily related to legal, tax and organisational advantages. When choosing a home Member State, it is important to have a modern and flexible regulatory regime, tax advantages related to capital turnover and allocation, a highly qualified workforce and efficient supervision of the financial sector. Luxembourg, with the above characteristics, was able to attract other investors with its offer. Table 1 shows the number and share of cross-border distributed investment funds registered in Luxembourg, Ireland, France, and the rest of the Member State (including the United Kingdom) in 2008, 2018 and 2022, and the regions of the world to which these funds are distributed.

Table 1.
Worldwide distribution regions and countries of registration of cross-border funds in 2008, 2018 and 2022

Region	**Year**	**Countries of registration of cross-border funds**								**Sum in given year**
		Luxembourg		Ireland		France		Other		
		Number of funds	Share (%)	Number of funds	Share (%)	Number of funds	Share (%)	Number of funds	Share (%)	
Europe	2008	36714	76%	6277	13%	1030	2%	4208	9%	48229
	2018	61632	60%	29933	29%	3646	4%	7966	8%	103177
	2022	68842	55%	45804	37%	3898	3%	6885	5%	125429
Asia Pacific	2008	4111	71%	934	16%	13	0%	716	12%	5774
	2018	5067	74%	1246	18%	28	0%	519	8%	6860
	2022	5723	70%	2007	25%	59	1%	357	4%	8146
Middle East	2008	801	86%	85	9%	0	0%	43	5%	929
	2018	704	83%	83	10%	2	0%	63	7%	852
	2022	778	53%	640	43%	2	0%	56	4%	1476
Americas	2008	1414	70%	219	11%	15	1%	385	19%	2033
	2018	1180	51%	345	15%	95	4%	686	30%	2306
	2022	1505	63%	709	29%	99	4%	91	4%	2404
Africa	2008	74	58%	23	18%	0	0%	31	24%	128
	2018	190	66%	81	28%	0	0%	17	6%	288
	2022	195	53%	140	38%	0	0%	35	9%	370

Source: own calculation based on (PWC, 2009, 2019; Saint-Mard, Glover, Yazdani, 2023).

As can be seen from the data in Table 1, the dominant position of Luxembourg as a cross-border fund domicile is still evident, followed by Ireland in second place, then a group of other countries including the United Kingdom and, separately, France. However, subsequent legislation harmonising cross-border distribution requirements has significantly strengthened the positions of Ireland and France. Looking at cross-border distribution in 2022 compared to 2008, Luxembourg's share has declined in various parts of the world. This is most evident in Europe, where the share falls from 76% in 2008 to 55% in 2022. A significant increase in share is achieved by Ireland. The largest changes are in the Middle East region, where the share was 9% in 2002 and 43% in 2022, Europe (13% in 2002 and 37% in 2022) and Africa (18% in 2002 and 38% in 2022). France was chosen as the domicile of funds distributed in Europe for 3% of cross-border funds in 2022. As the data in the table show, there is a significant increase in interest in the distribution of investment funds registered in Europe outside Europe itself, which significantly strengthens their position as a global brand.

4. Summary

The purpose of this article was to present the development of the European investment fund market in the context of cross-border distribution and the challenges it poses. Differences in the regulation of cross-border distribution of investment funds existed both between Member States and between UCITS and alternative investment funds (AIFs). The ongoing and deepening harmonisation of regulations over the years and the strengthening of cooperation between regulators in different EU countries have contributed significantly to the development of cross-border distribution of investment funds. These regulations are also developing similar cross-border distribution rules for the two types of funds mentioned. The share of domestic funds in the structure of total assets of European investment funds, although dominant, is gradually decreasing in favour of an increase in the share of assets held by cross-border funds distributing their securities in other EU countries and outside the EU. The growing number of cross-border investment funds has been accompanied by a faster increase in the number of cross-border fund registrations. An increase in the level of development of cross-border distribution, as measured by the ratio of the number of registrations per cross-border fund, is also evident. At the end of 2022, a cross-border fund was registered in more than nine countries on average. This not only demonstrates the significant impact of the investment fund market on EU competitiveness and development. It also confirms the positioning of investment funds established under EU law as a global brand, no longer limited to UCITS funds but also to alternative funds (AIFs), which are increasingly used for cross-border distribution.

Luxembourg's continued dominant position is no longer as strong as in previous decades. The development of legislation on the distribution of investment funds has contributed to improving transparency and accessibility of information on investment funds for investors and to strengthening the position of other Member States (Ireland, France), which are increasingly, albeit slowly, being chosen as domiciles for investment funds.

The development of cross-border investment fund legislation can be very challenging for smaller, local investment fund markets. The expansion of the range of investment-policy-diverse, cross-border investment funds on offer will pose serious competition to domestic offerings. It could also have a significant impact on demand from individual investors, in particular by increasing access to a variety of investment opportunities and diversifying savings, especially for retirement purposes.

One limitation of this study is undoubtedly the limited access to complete long-term data on the cross-border distribution of investment funds, including assets and numbers by country and fund type for UCITS and AIF. An important element in the future development of this market may be the implementation of educational and promotional campaigns aimed at potential investors to raise awareness of the benefits of investing in cross-border funds. Cross-border distribution of investment funds can increase retail investor access to fund categories that are that are not offered in domestic markets, particularly in the growing market for ESG-based sustainable funds. Another challenge is the increasing digitalisation of the processes involved in the cross-border distribution of investment funds, which could remove barriers to distribution, increase efficiency, reduce costs, and facilitate access to funds for a wider range of investors. These developments could radically alter the balance of power in the global investment fund market. The challenges identified could become potential directions for further research into aspects of cross-border fund distribution.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

MARKETING ACTIVITIES OF ENTERPRISES TO INCREASE CUSTOMER VALUE

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Purpose: The purpose of the article is to present, based on source materials and market observations, what marketing activities companies implement to increase customer value. This is because today having a product or service desired by customers does not guarantee success. Marketing practitioners must identify the right media and messages through which to convey to customers what they want to know about them. Mass marketing practitioners especially need to identify well a target market that is both worthy of entry (from the point of view of sales volume and profits) and vulnerable (from the point of view of communication).
Design/methodology/approach: The purpose of the article was realized based on the analysis of literature sources and market observations.
Findings: Good customer relations are a company's most important potential. An important task is to identify profitable customers and use them effectively. For future development, it is important to establish in the company such a way of determining customer value that takes into account all relevant factors from the point of view of customer value.
Practical implications: The topics described in the article can be a source of valuable inspiration for companies interested in building customer value through appropriate selection and alignment of marketing activities.
Originality/value: The author draws attention to current and important issues occurring in the process of building customer value.
Keywords: marketing, marketing activities, value, customer, customer value.
Category of the paper: Theoretical article.

1. Introduction

The value of a customer to a company is the financial benefit it can receive as a result of the company-customer relationship. However, this benefit should be reciprocal, meaning that for the money spent, the customer should receive satisfaction from the purchase of the product or service. Manufacturers and sellers in today's market are determined to vie for every customer, using increasingly sophisticated methods of acquiring them. Competition for the buyer is also becoming more and more sophisticated, the analysis of consumer behavior more and more detailed due to the fact that it is in the plane of marketing activities that companies see opportunities for success in the competitive market. The change in the orientation of the activities of many enterprises today is aimed at increasing the importance of the customer and directing all activities towards him in order to ensure maximum satisfaction. Today, the needs, tastes and desires of customers largely determine not only the offers of enterprises, but also the choice of marketing activities in line with customer expectations. Having a product or service desired by customers, contrary to appearances, is not a guarantee of success today. It is up to the marketing practitioner to identify the appropriate media and messages through which to convey to the customer what they want to hear about them. Nowadays, in addition to presenting the right offer and price through selected distribution channels or hiring qualified personnel, it is also important to implement modern marketing activities to promote the company and meet the growing expectations of customers.

2. The essence and determinants of customer value growth in the enterprise

Today's market is constantly changing due to evolving consumer needs. Obtaining and maintaining a competitive advantage depends largely on the value package offered to customers. Value, according to Doyle, is increasing the effectiveness of customer satisfaction (Doyle, 2003). It is the sum of all the benefits a consumer expects from a product and a reflection of the effectiveness of satisfying his needs with a product or service. The concept of value delivered to the customer, as defined by Kotler, says that the value delivered to the customer is the difference between the total value of the product to the customer and the cost to the customer of obtaining it. Closer to the consumer, the definition of value is framed as the consumer's assessment of the utility of a certain product based on the perception of what is received, relative to what is Niven (Zeithaml, 1998, pp. 3-7). The total value of a product to a customer is the sum of the benefits the customer expects from a product or service (Kotler, 1994).

Customer value consists of, among other things (Düssel, 2009, p. 264):

- the current turnover and income it brings to the company,
- the potential for turnover and revenue it can generate in the future (most important!),
- growth potential,
- opportunity to cooperate,
- the client as a provider of references (reference potential),
- the customer as an informant (e.g., about product, service and process innovations),

- customer's deductible (what portion of its demand will the customer cover with our products?),
- internal synergy potential.

If the value of customers is built by the value delivered to them, then the basis of a marketing value strategy must be adequate knowledge of customers, understood not so much as average, average trends in their behavior, but as knowledge of individual customers, the conditions in which they live and work. This knowledge must be obtained directly from the customers themselves, processed appropriately into decisions, and must be available to employees involved in building and executing customer value growth strategies. The more individualized this knowledge is, the better the company's chances of tailoring marketing activities to customers' preferences and expectations. Gathering customer data and information is critical. With current technological capabilities, it is also not a major problem for most companies, while the challenge may be to take care of the "cleanliness" of databases and to update knowledge and get rid of unnecessary knowledge in order to have the clearest picture of the customer.

Haeckel and co-authors, on the other hand, point out three basic principles in building customer value through experience, these are (Lovelock, Wirtz, 2004, pp. 344-345):

1) connectivity and compatibility of experiences - the key issue is compatibility between the scope and intensity of experiences, e.g. the hotel's corridor and entrance should represent a similar quality of furnishings as the decor of guest rooms - they should be neither better nor worse decorated than they are, as this can cause dissonance and adversely affect the overall perception of the stay. Positive experiences also combine across related services, enhancing the overall image effect;
2) the use of material and human factors in enhancing the functionality of products and services - all components of the offer together shape the total perception of the buyer, so they should be analyzed in terms of the type of consumer impressions created, e.g.: elements of the environment, personnel behavior. This point should also include the use of the latest technologies in building customer experiences;
3) building an emotional connection with the customer - a sensory-driven experience generates an emotional response, which is the basis for building long-term bonds. Emotional engagement, however, is not based solely on the sensory stimulation that is attractive to the customer, but can result from other mentally inspiring features of the offering (e.g. culture, charismatic leaders, brand secrets, rituals, communities).

Communication is also an important aspect. Communication has two tasks to fulfill: first, to get the word out about the actions being taken to increase value and ensure that they are understood within the company; and second, to build motivation for implementation stemming from the belief that good, appropriate actions will contribute to the success of the company (Starovic, 2004, p. 123).

In summary, turning customer information into concrete actions can be metaphorically compared to a trodden path, i.e. taking such a path to satisfy customer needs that customers themselves "trodden" - they choose as the one that is the shortest or easiest for them.

3. Traditional versus modern marketing activities of enterprises

In the past, managers managing products, particularly relevant to the customer, could rely on mass marketing to reach a broad target market. Mass media advertising techniques have been well-educated and precise since the early days of television. In today's market, however, marketing practitioners have new problems, which are (Soberman, 2001):

- the fragmentation of the media means that they cannot rely on the mass media to deliver news to a wider audience. Instead, it is necessary to use several complementary channels;
- the cost of producing creative content is high, and approaches suitable for use on television networks do not work well on alternative channels (or media);
- - normal television and radio are still important, but alternative channels such as interactive television and the World Wide Web are becoming increasingly important in reaching a significant group of customers (88.4% of Poland's population are Internet users) (Raport, 2023).

In addition, a more heterogeneous market means that customers will increasingly demand more personalized products, created specifically for them, which will also have important implications for marketing practitioners, who will have to take greater care in their ability to gather information to reach smaller segments, on the one hand, and on the other hand, ensure that they use the information skillfully to match their offers as precisely as possible to identified customer needs. Often, too, greater media fragmentation means changing the rules to which niche product manufacturers and mass marketing practitioners are accustomed. The role of marketing in the management of a business is very important, manifested in many steps including the creation of customer values, target audience groups, when implementing marketing activities or checking the end result, which is the sale of a product or service. Nowadays, in addition to presenting an appropriate offer and price through selected distribution channels or hiring qualified personnel, it is also important to implement modern marketing activities to promote the company. One of the most frequently used marketing activities by enterprises today is Internet marketing, building an image on the web strengthens not only the position of the enterprise against the competition, but is an important channel for communicating with consumers. The presence of the enterprise on the web can occur by having a website, where the offer is presented, the price list, the values offered, the possibility of quick contact with the customer in real time.

Another prospect for promotion is a presence on social media, that is, on social networks such as Facebook, X (Twitter) or Instagram. Presented content on such social networks is aimed at arousing the audience's interest in new promotions, product photos or showing the possibility of using the product. Presence in social media also allows to get to know the target group better and finalize the offer so that the consumer is satisfied. An increasingly common phenomenon is also the promotion of products with the involvement of influencers, through advertising on social media. Influencers promote products or services by showing the advantages that the product or service has and encourage purchase. E-marketing also includes activities such as graphic ads, e-mail marketing, by sending newsletters, promotional offers by e-mail and search engine positioning. Another marketing activity is product placement, otherwise known as product placement, it can be assumed that this is a method of promotion involving the placement on a commercial basis in a film, play, television program or other audiovisual or print media of a product or situation presenting a certain pattern of consumer behavior (Czarnecki, 2003, p. 22). Creating a positive image also has a major impact on branding of both the product and the company is realized by the so-called CSR (Corporate Social Responsibility) concept. The concept distinguishes standards such as: responsibility, transparency, ethics, respect for the rights of stakeholders, respect for the law, respect for international standards of business conduct, respect for human rights. This concept is implemented by many enterprises, especially those whose goal is to take care of the quality of life of society, taking care of the local community. A marketing activity that uses CSR is financial support through sponsorship of sports or cultural events. Another activity is the use of loyalty marketing, which is designed to build a lasting relationship between the seller and the customer. Loyalty marketing can be regarded as a comprehensive approach that concentrates all marketing-relevant activities in a single business management model; it is a systemic approach that directs the entire enterprise towards the customer (Schuller, Fuchs, 2005, pp. 10, 33). A loyal customer is something special for any manufacturing or service company, because they know the product, its value, and are eager to reach out or come back again. The bond formed with the customer creates a habit, a positive feeling at the thought of the product or service. Loyalty programs include discounts, free products, the ability to collect stamps/points for each purchase, loyalty cards but also offering services available only to certain customers (special rules for guaranteeing reservations, for example). If a company wants to build a long-term relationship with a customer, it must plan a given loyalty program in great detail and follow the rules and regulations. For example, the study "Loyalty programs as a part of company's marketing strategy" prepared at Mendel University in Brno includes a catalog of benefits resulting from the introduction of loyalty programs. These are (Mrkosová, Dufek, Majer, 2011, pp. 199-204):

- building trust and strengthening good relations with existing customers,
- attracting new customers who might not otherwise show interest in the products offered,
- increasing customers' motivation to make more purchases,

- strengthening market position,
- increasing awareness of the company among customers,
- increasing the frequency of purchases.

The goal of applied marketing activities in any industry is first and foremost to focus on the customer. Enterprises, through marketing activities, create their own value, create their own ideal and strive to realize the goal of the business through promoted content. Attracting attention and encouraging people to buy a product or use a service increases the number of customers, while also increasing the value of the business. For value creation, communication with the market is essential. Marketing activities are also aimed at communicating with the customer, creating a kind of bond, a group of regular customers who will use the services of a particular hotel company again.

In an era when companies are constantly searching for more and more effective marketing instruments, visual merchandising represents a special way of communicating with the customer, especially with regard to the retail enterprise. The uniqueness of this instrument lies in the association of two perspectives: operational, creating the uniqueness and uniqueness of the place of direct contact between the customer and the environment of the purchasing process, i.e. the interior of the store, the salesperson and the commercial offer, and strategic, where it is used in building the image as a permanent element of the company's competitive strategy.

4. Value offered to customers in today's marketplace

Values vary. Value is the unique combination of benefits received by target buyers, including quality, price, on-time delivery and pre- and post-sale services (Martelo-Landroguez, Barroso-Castro, Cepeda, 2015, pp. 467-481). A modern enterprise should build its own unique customer value map, including a set and order of priorities. Due to easy access to knowledge, customer capital has become more involved in the exchange process. Kent Monroe, on the other hand, defined customer value as the relationship between the quality or perceived benefits in a product and the perceived sacrifice of buyers paying a given price (Asgarpoura, Hamid, Sulaiman, pp. 632-640). The self-awareness of customers has a huge impact on the value for the enterprise, so properly identifying customer needs and quickly following their changes allows you to adapt to market requirements and gives you the opportunity to fight the competition (Adamska, Kucińska-Landwójtowicz, 2018). Defining markets and understanding customer value categories must be treated as a development opportunity for the enterprise. This is the most important, and most difficult, stage in building customer value and enterprise-wide strategy. Too often, companies have equated this process with ideas for a new product, new technology or organizational solutions, that is, starting this process "from the end" and then seeking customers for these products. As a result, this led to the failure of about 90 percent of new product or technology ideas. Assessing market opportunities should be conducted from a level of understanding of customers' needs that is derived from their goals, objectives and the results they want to achieve. This approach, in turn, makes it possible to distinguish two areas of opportunity: opportunities for new values (benefits) for the customer that will solve their problem (new sources of revenue and profit), and opportunities to reduce costs incurred in such areas of the company's activities that lead to inadequate or excessive service to customers (values not used by customers, e.g., too much saturation of product functions). Skillful selection of marketing activities, their variety and customization is the key to reaching the target customer segment. A well-chosen marketing campaign, using modern tools, allows not only to gain the trust of the customer, which is very important for the brand, but consequently will translate into its choice in the purchasing process.

It is worth noting that any offer can be expressed as a set of organizational, economic, social and technical benefits received by the customer, as well as the company. In addition, customer value is a relative category, as it is always evaluated under specific conditions against alternative offers. Operational decisions therefore require each time a new definition, estimation and presentation to customers, in such a way that they understand how this value can help enable them to achieve their goals, and why it has advantages over the competition.

5. Summary

The market success of an enterprise depends on a number of factors, which every enterprise should recognize and take into account in key decisions regarding not only production but also the marketing activities used. Market success is a term with a large scale of gradability, for some companies success is the absence of significant failures in the business, for others the introduction of innovations and the continuous effort to increase the value of the company. This is a very subjective scale, and it is difficult to say unequivocally whether for company A the same achievement will be a success for company B (Lachiewicz, 2013, p. 149). Market success is often associated with satisfactory economic performance, an increase in market value or an increase in profits. However, it is worth remembering that this is not the only determinant of success. Nowadays, every entrepreneur, regardless of the industry, must face up to doing business in an environment of dynamic changes and fierce competition, and this undoubtedly requires the application of increasing creativity in the use of marketing activities and their proper selection to the target group of customers. Companies should follow the needs of their customers, such as to prevent them from moving to competitors.

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SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2024
ORGANIZATION AND MANAGEMENT SERIES NO. 192

BUSINESS ENVIRONMENT INSTITUTIONS IN CREATING THE WROCŁAW STARTUP ECOSYSTEM

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Purpose: The article's main aim is to present issues related to the importance of business environment institutions (BEIs) in creating startup ecosystems, particularly in developing the Wrocław startup ecosystem. The specific goal is to identify the most important actors of the Wrocław ecosystem and present the offer of business environment institutions operating in the city, along with their assessment.
Design/methodology/approach: To achieve the intended goals, the author based her considerations on analyzing the literature on the subject, using both Polish and foreign sources, including scientific articles and reports prepared by Polish and foreign organizations. The analysis of business environment institutions in Wrocław was based on information available on the official websites of these entities, e.g., araw.pl or startupwroclaw.pl. Additionally, in the last part, the author used the results of empirical research conducted in the form of individual in-depth interviews among startups, BEIs, and experts rooted in the Wrocław startup ecosystem to learn the respondents' opinions on the quality of the institutional environment of the ecosystem in which they operate.
Findings: Business environment institutions are a vital element of effective startup ecosystems worldwide. Access and support from these institutions play an important role for startups, and their importance is constantly growing. Wrocław is well-rated as an ecosystem, offering a wide range of diverse business environment institutions that support startups in consulting, incubation, technology transfer, innovation development, and access to capital. The advantages of the city include customer approach, service in English, promotion of startups, and access to infrastructure enabling development and innovation. Despite the rich offer, not all startups use it, mainly due to the lack of information, which is one of the main shortcomings and is an element that requires improvement. The lack of coordination and flow of information between BEIs, and duplication of ideas or initiatives is a problem also indicated by the business environment institutions themselves, which see the solution in greater integration of activities, e.g., under the patronage of ARAW, which is the main animator of the Wrocław ecosystem. Other problems include limited possibilities of financing activities at various stages of development, lack of audit programs, and access to certain experts/advisors.
Social implications: The best startup ecosystems in the world can attract and retain the best, brightest innovators who create solutions that can revolutionize various areas of life. Well-functioning business environment institutions are part of this success while constituting an excellent example for other BEIs to follow in the international space. Although Wrocław is not among the best ecosystems in the world, it can be said that it aspires to such a group,

which is reflected in various reports and rankings of the world's best ecosystems. However, in Poland and Europe, mainly Central and Eastern Europe, it is at the forefront and can serve as a benchmark for other cities.
Originality/value: Many studies on startup ecosystems and startups are found in the literature. These are often studies of a general nature or relating to the most recognizable ecosystems, such as Silicon Valley, London, or Singapore. The situation is similar regarding business environment institutions, it is possible to find studies on the statistics of their occurrence, tasks performed, and the general role they play in supporting entrepreneurship. The literature lacks studies on specific examples of the functioning and creation of startup ecosystems in Poland by business environment institutions. This article refers to the example of Wrocław, which may constitute a benchmark for other cities. The article's value points out the most important BEIs in the Wrocław startup ecosystem, defining their tasks and their assessment from the point of view of entities operating in it and pointing out the most critical shortcomings requiring improvement.
Keywords: business environment institutions, startup, startup ecosystem, Wrocław.
Category of the paper: Research paper.

1. Introduction

Wrocław is one of the most dynamically developing cities in Poland. It is not only the cultural and historical center of Lower Silesia but is also considered an innovative hub, recognizable and appreciated in Poland, and in the international context, it is often referred to as the Polish Silicon Valley. It is, therefore, not surprising that Wrocław is a good place for startups to develop and grow.

In the era of rapid development of technology and entrepreneurship, as well as changing operating conditions, business environment institutions (BEIs) that co-create startup ecosystems can play an essential role in supporting the development of startups. The term BEI covers various types of entities that influence the economic activity of companies by offering a wide range of entrepreneurship support services. These entities operate, among others, as development agencies, training, and advisory centers, financial and lending institutions, innovation and entrepreneurship centers, chambers of industry and commerce, industry associations.

Numerous studies in the literature focus on startup ecosystems and startups, often of a general nature or centered on well-known ecosystems. Similarly, research on business environment institutions is prevalent, focusing on their overall role in supporting entrepreneurship. Notably, there is a gap in the literature concerning specific case studies on the role of business environment institutions in the functioning of startup ecosystems in Poland. This article addresses this gap by examining the example of Wrocław, which serves as a potential benchmark for other cities.

The article's main aim is to point to the importance of business environment institutions in forming startup ecosystems, with particular emphasis on creating the Wrocław environment for startups. The article highlights the key business environment institutions within the Wrocław startup ecosystem, elucidating their roles, and evaluating them from the perspective of entities operating within the ecosystem. Furthermore, it identifies crucial shortcomings that require attention and improvement. This approach provides a base for further research and also presents insights that can serve policymakers, and practitioners interested in enhancing startup ecosystems and fostering entrepreneurship in Poland.

2. Methodology

In the article, the author based her considerations on Polish and foreign literature on the subject, including books, scientific articles, and reports prepared by various entities, e.g., the Polish Agency for Enterprise Development, the Association of Organizers of Innovation and Entrepreneurship Centers in Poland, StartupBlink or Startup Genome. The author used the Google Scholar and Science Direct databases to collect scientific literature. These sources allowed the author to define concepts related to startups, the startup ecosystem, and business environment institutions. Then, to characterize the selected BEIs and present their offer, the author used the websites of business environment institutions operating in Wrocław, including araw.pl, startupwroclaw.pl, technologpark.pl and wctt.pwr.edu.pl.

In the last part, to determine the assessment of Wrocław's BEIs in the eyes of the entities operating there, the author presented selected results – regarding only the influence of BEI on startups, of broader qualitative research about the quality of the Wrocław startup ecosystem, which was conducted in April 2022. The broader study aimed to determine the startup's growth and inhibiting factors, assess the importance of the ecosystem in its development, and evaluate its quality. The qualitative research was conducted in the form of individual in-depth interviews (IDI).

Individual in-depth interviews involve a conversation between two people, where the interviewer tries to obtain information about the study's purpose and deepen knowledge on a given topic. This method is chosen when it is necessary to get more in-depth information from one person (Maison, 2007) when it is required, among others, to obtain independent opinions of experts, difficult-to-reach people, when it is crucial to eliminate mutual influence between respondents or difficult topics are discussed (IMAS International, n.d.).

Interviews were conducted among Wrocław startups (15 respondents, including entities from industries such as IT, financial services, creative industry, renewable energy sources, and games), BEI representatives (5), and experts (5) dealing with startups. Respondents commented on the quality of the ecosystem, success factors, challenges and problems, cooperation between the entities creating it, access to financing and human capital, and gaps in the ecosystem, and indicated recommendations for its improvement. The article presents the most critical conclusions regarding assessing business environment institutions operating in the Wrocław ecosystem.

3. The place of business environment institutions in startup ecosystems

Startup is an ambiguous concept and difficult to define. The term first appeared in 1976 in an article in Forbes magazine, around the same time as the first technology startups, Microsoft (1975) and Apple (1976). The word "startup" was mainly used to describe emerging technology companies. Since then, the concept has expanded to many other sectors (Gulia, 2017).

One of the most frequently cited definitions of a startup is the one presented by Ries (2011). He defines a startup as a human institution designed to deliver a new product or service under extreme uncertainty. Startups can be created by anyone who makes a new product or business in complete uncertainty, and it does not matter the economic sector or place of development - a business incubator, a government institution, a university, or a branch of a large company. Čalopa et al. (2014) defined a startup as a newly established venture only in the development and market research phase. According to the authors, such projects most often concern the technology industry, but not only. The places where projects are implemented are most often large cities due to the sizeable receiving market and the functioning of ecosystems that can significantly impact their development. Blank (2013), in turn, defined a startup as a temporary organization that is looking for a profitable, scalable, and repeatable business model. The characteristic feature here is temporariness – when a startup finds its business model, it ceases to be one. The second feature indicated by the author is scalability, which means the possibility of growth and expanding the scale of the venture's operations to increase income (Blank, 2013). Storey (1994) and Birch et al. (1995) consider a startup to be an enterprise that is no more than ten years old and uses innovative technologies and/or a business model. These entities are characterized by high employment and/or sales growth dynamics. The authors pointed out the importance of such entities in creating jobs and innovation.

You can also find definitions of startups in Polish literature. These include the spiral definition of startups proposed by Skala. According to the author, any organization with very limited resources and uncertain or no demand for its products can be considered a startup. The extensiveness of the definition makes it necessary to clarify it with further subsets, which are also subsequent stages of startup development: finding an innovative business model, using modern technologies and introducing a new product to the market; disruption; hyper scalability, i.e., rapid growth in the number of users; creation of automation technologies that translate the number of users into revenue growth; translating the increase in revenues into a sharp rise in the company's value (Skala, 2017).

Despite the lack of a single definition of a startup, their characteristic features can be pointed out, such as a short period of operation, innovation, scalability, uncertainty of operation, and success on the market. Importantly, startups do not operate in a vacuum. According to Moore (1993), innovative ventures often cooperate and attract partners, suppliers, and customers, creating networks of connections. Companies should be part of a broader business ecosystem that spans various industries. In an ecosystem, companies jointly develop their capabilities around innovation: they cooperate and compete to support new products, meet customer needs, and ultimately implement further innovations. Lipińska (2018) indicates that the concepts of business ecosystems are an extension of the theory of value chain networks, as described by Rong et al. (2015) and Stańczyk-Hugiet (2015). Moore (1993) included not only the elements of the value chain as the leading entities of ecosystems but also other organizations and stakeholders, such as administration, industry institutions, and customers, considering the interactions between them. Håkansson and Ford (2002) pointed out in their research the complex and long-term nature of the connections of ecosystem participants resulting from the experiences of mutual interactions, as well as the dependence of the efficiency of organizations included in the ecosystem not only on their competencies but also on the interactions with other entities and on the general condition of the entire ecosystem.

According to Lipińska (2018), startup ecosystems are a specific category of business ecosystem separated due to the dominant entities in it, i.e., startup organizations in the initial phase of development, looking for a profitable and repeatable business model, introducing innovative products to the market and operating in conditions of high uncertainty. In turn, Baloutsos et. al. (2022) consider ecosystems not as objects but as a process of building successful startups. They believe only such startups create jobs and positively impact the economy. Tomaszewski (2018) defines the startup ecosystem as an economic and social tissue created by many different entities on which innovations are born and developed in the form of startups.

The entities that should be present in a well-functioning startup ecosystem include financing institutions, therein business angels and venture capital funds (VC); universities and research centers; specialized experts, including mentors, advisors, lawyers, and marketing specialists providing advice and support to startups; accelerators, business incubators, coworking spaces; corporations and other entities open to cooperation with innovative enterprises (Tomaszewski, 2018; Deeb, 2019). For the efficient functioning of startups, the crucial factors are relations between entities in the ecosystem, cooperation of individual actors (e.g., cooperation between science and business), appropriate legal regulations, high-quality human capital and conditions for its development, appropriate infrastructure for the development of innovations, as well as efficiently functioning business environmental institutions.

According to North (1990), who studied the impact of institutions on economic development, business environment institutions are a set of institutions and regulations that influence the economic and legal environment in which enterprises operate. These institutions include, among others, government bodies, regulatory agencies, regulators, and other institutions that shape the legal and economic framework for business activities.

In Polish literature, references to BEI can be found, among others, in Lisowska and Stanisławski (2015), Kubiński and Ropuszyńska-Surma (2017), Filipiak and Ruszała (2009), as well as in the studies of various support institutions, which serve as a source of reference for many authors. According to the Masovian accreditation system definition, BEI fills the gap between market mechanisms and public administration activities. These entities constitute infrastructure that accelerates development processes, and their activities focus primarily on broadly understood support services for small and medium-sized enterprises, based on consulting, infrastructure, laboratory, and prototyping support, as well as financial support enabling acceleration of the development of business entities (Mazowsze, n.d.). According to Burdecka (2004), business environment institutions are non-profit institutions that do not operate for profit or allocate profit for statutory purposes in accordance with the provisions of the statute or another similar document. These entities have the material and technical base, human resources, and competencies necessary to provide services to the small and medium-sized enterprise sector. Kamińska (2011) also includes commercial entities, such as banks and private consulting and training companies, in the group of business environment institutions. This approach is reflected in the research report on innovation and entrepreneurship centers in Poland issued in 2021 by the Association of Organizers of Innovation and Entrepreneurship Centers in Poland, where BEIs were divided into two groups due to the goal set for business environment institutions: commercial institutions (e.g., VC and seed funds, commercial advisory and training centers, commercial laboratories) and non-commercial institutions whose primary goal is to support entrepreneurship and innovation (Mażewska et al., 2021). According to Kamińska (2011), due to the increasingly complex and demanding institutional and legal environment, BEIs play a significant supporting role, in particular for small and medium-sized enterprises.

The activities of business environment institutions in Poland focus on three main types of activity (Bąkowski, Mażewska, 2015; Kubiński, Ropuszyńska-Surma, 2017):

1. Entrepreneurship centers that deal with promoting and incubating entrepreneurship aimed at creating business entities and jobs, providing infrastructure support and formal conditions for running a business. The entities implementing these activities include training and consulting centers, pre-incubators, and business incubators.
2. Innovation centers that offer soft services, supporting startups in creating innovations, including providing information, consulting, training, technology transfer, commercialization of new business solutions, and facilitating cooperation between the science and economy sectors. This group includes entities such as, among others,

technology transfer centers, technology, industrial and scientific parks, academic business incubators, and innovation centers.

3. Non-bank financial instruments, including institutions dealing in the distribution of repayable and non-refundable financial instruments from public sources, European Union funds, and funds from private sources, including loan funds, loan guarantee funds, seed capital funds, and business angel networks.

Support from business environment institutions is related to the activation of academic entrepreneurship and cooperation between science and business, improvement of company management and better use of resources, establishing cooperation with large companies and corporations, providing assistance in obtaining financial support, increasing competitiveness through the absorption and implementation of new technologies, transfer of knowledge and technology, providing pro-innovation services (Lisowska, Stanisławski, 2015; Filipiak, Ruszała, 2009).

The best startup ecosystems in the world include Silicon Valley, London, New York, Los Angeles, Tel Aviv, Boston, Beijing, Singapore, Berlin, Amsterdam, and Bangalore (Startup Genome, 2023; StartupBlink, 2023). The most crucial success factors of these locations include proximity to good universities, quality of life in a given city, access to financial support, availability of accelerators, availability of mentors and experienced entrepreneurs, entrepreneurial culture, appropriate infrastructure for the development of innovations, access to talents and support from business environment institutions.

4. Wrocław as an innovation hub

Wrocław is one of the most dynamically developing cities in Poland. The potential and sound investment and economic climate, as well as the availability of business environment institutions, make the capital of Lower Silesia an attractive city for domestic and foreign investors. The city is very well developed economically, is a leader in innovation, is dynamic, has a rich cultural and entertainment offer, provides many amenities for residents, and creates opportunities for professional and personal development. The quality of life is rated high. Moreover, the city aspires to be multicultural due to its geopolitical location and the great interest of international students, business people, employees, and tourists.

The city's economy is based on knowledge-based enterprises. A significant intensification of activity is also visible in the automotive, machine construction, pharmacy, modern business services, and IT&ICT industries. Many global players have invested in Wrocław, including 3M, Google, IBM, US Pharmacia, Nokia, Opera Software, BNY Mellon, etc. Wrocław is Poland's leading research, development, and IT center. The city's advantages include its academic character (28 public and private universities), many highly qualified employees, and industrial and technological traditions. Wrocław is also one of the largest startup hubs in Poland, where over 250 startups operate, which makes Wrocław the city with the highest concentration of such companies in Poland.

Wrocław has often been appreciated in various international rankings assessing the level of innovation, competitiveness, residents' quality of life, and investment climate. In 2022, Wrocław was among the hundred smartest cities in the world in the IESE Cities in Motion Index ranking (IESE, 2022). In 2022, it was appreciated and was placed in a very high position (15th) in the overall Global Cities of the Future 2021/22 ranking prepared by fDi Magazine, ahead of cities such as Zurich, Warsaw, Seoul, and Toronto (fDi Magazine, 2021). Additionally, Wrocław won in the small/medium-sized cities category, taking first place in the Business Friendliness subcategory, second place in the Cost Effectiveness category, and sixth, ninth, and tenth place, respectively, in the Economic Potential, Human Capital, and Lifestyle and Connectivity categories (Wroclaw, 2021).

The capital of Lower Silesia has also been noticed in the rankings of startup ecosystems in Poland and around the world. Wrocław was at the top of the "Polish Startups 2022" ranking prepared by the Startup Poland Foundation (Startup Wroclaw, 2022) – the authors indicated that the city has the most significant number of technology companies registered in Poland. According to the international organization "Mind the Bridge", which in 2018 prepared a report titled: "StartupCity Hubs in Europe", Wrocław's future growth indicator in terms of startup development is the highest in Poland and the second in Europe, after Berlin (StartupCity, 2018).

Wrocław's high position and good development prospects were also confirmed by the ranking published in the report "The Next Generation of Tech Ecosystems" prepared by Dealroom.co. Wrocław was ranked first among Polish cities in the category of rising stars of technology hubs. Moreover, the city was ranked second in Europe and eighth in the world in this category (Dealroom, 2022). Wrocław was also included in "The Global Startup Ecosystem Index 2023", where it was ranked 164th, an increase of 23 places compared to the previous report. Wrocław has overtaken Kraków in the ranking and is placed behind Warsaw in the ranking of Polish cities (StartupBlink, 2023).

5. Institutional environment of the Wrocław ecosystem

The Wrocław startup ecosystem is rich in various types of institutions providing a wide range of services to the entities operating in it. On the website startupwroclaw.pl, which is a kind of compendium of knowledge regarding the Wrocław ecosystem, it is possible to find links to the most essential supporting entities, divided into three categories: financing (accelerators, venture capital funds, public financing – a total of 54 entities, operating locally in Wroclaw – 14 in Wrocław), research institutions (24 entities, including universities, laboratories, research and development institutes; the main research areas include computer science, engineering, chemistry and pharmaceuticals, biotechnology and nanotechnology), spaces (53 entities, including business incubators – 12, co-working spaces – 37, virtual offices 35; some entities offer various forms of support).

The Wrocław Agglomeration Development Agency S.A. (pol. Agencja Rozwoju Aglomeracji Wrocławskiej – ARAW) occupies a central place in the Wrocław ecosystem. ARAW, as its employees say, is the animator of the entire support system. Other crucial institutions in the Wrocław business environment include Wroclaw Technology Park S.A. (pol. Wrocławski Park Technologiczny – WPT), Wrocław Center for Technology Transfer (po. Wrocławskie Centrum Transferu Technologii – WCTT), Łukasiewicz Research Network – Electrical Engineering Institute, PORT Polish Center for Technology Development, Concordia Design Wrocław, several business incubators (e.g., Academic Business Incubator at the Wrocław University of Science and Technology, inQUBE at the Wrocław University of Economics and Business, Lower Silesia Academic Business Incubator – pol. Dolnośląski Akademicki Inkubator Przedsiębiorczości – DAIP), Lower Silesian Development Fund (pol. Dolnośląski Fundusz Rozwoju – DFR), Wrocław Concordia Design Accelerator and many others. Due to space limitations, only selected entities will be discussed below.

ARAW was established in 2005 and is owned by the Wrocław Commune and 32 municipal governments from the agglomeration. Its goal is to attract foreign investors, cooperate with the agglomeration's business as part of post-investment care, create conditions for the development of startups, and thus create new jobs and economic growth in the region. Activities related to the functioning of startups and shaping the business environment are primary responsibilities of the Business Support Center; support and information are also offered as part of the Invest in Wroclaw, Startup Wroclaw, and Made in Wroclaw projects (ARAWa, n.d.).

The Invest in Wroclaw team provides active support for companies located in the agglomeration, networks Polish and foreign businesses, implements a Wroclaw support platform for the startup ecosystem and technology companies, focusing on technologically advanced projects – research and development centers, Industry 4.0 and intelligent production. The team provides information about the market and economic potential of Wrocław and legal and tax advice on how to start a business in Wrocław (ARAWb, n.d.). Invest in Wroclaw has published numerous industry and sector publications, e.g., “Wroclaw IT Sector” 2019, “The AI Sector in the Wroclaw Agglomeration” 2021, “Driven by Knowledge, people & innovation” 2021, “The AI Sector in the Wroclaw Agglomeration” 2021, “GAMEDEV in Wroclaw Agglomeration” 2022 and a report entirely devoted to the Wrocław startup ecosystem entitled "Wroclaw. Startup Your Life” 2018. The Made in Wroclaw project presents the successes of local entities, technological leaders, dynamically developing startups, and innovators. The annual conference carried out as part of the project is a place for the promotion of Wrocław companies and the exchange of knowledge and experiences of business practitioners.

From the point of view of the development of startups, a significant ARAW project is Startup Wroclaw – a website that presents the Wrocław startup ecosystem in a nutshell. The portal aims to connect ecosystem entities to promote and support the growth of innovation, entrepreneurship, and cooperation, together with local technology companies, startups, entrepreneurs, academia, research and development and business institutions as well as city authorities. The website includes several analytical studies, information on startup financing opportunities, access to office space, research and laboratory space (equipment and qualified staff), current industry events, conferences, symposia, and promotional initiatives. Additionally, there is a database of startups registered and developed in Wrocław (Startup Wroclaw, n.d.).

Another entity forming the core of Wrocław's institutional environment is the Wrocław Technology Park, which deals with business incubation, providing infrastructure, laboratory, research and development support and networking opportunities, information support, and promoting startups operating there. WPT activities are addressed to startups, companies from the SME sector, and extensive international entities. The scope of assistance offered is best defined by the STELLAR HUB program, where the star metaphor refers to individual areas of the offer and companies cooperating with WPT. STELLAR HUB creates nine support areas that cooperating entities can combine and use in parallel to create their own constellation of products and services: business infrastructure (office and laboratory space); industrial hall with production and warehouse facilities; business incubators; consulting and networking (training, assistance in obtaining financial support); Technoludek Kindergarten and Educational Center; laboratories and prototypes; research and development (technological base, creation of R&D consortiums); experimental plant (possibility of conducting tests, up-scaling and optimization related to the life-science industry); innovation sector BIG SCIENCE HUB (platform integrating business and science, mediating cooperation between Polish business and Big Science) (WPT, n.d.).

Apart from WPT, business incubation is widely implemented, among others, at Wrocław universities. An example is the Academic Entrepreneurship Incubator at the Wrocław University of Science and Technology or inQUBE at the Wrocław University of Economics and Business. Academic incubators offer space for running a business, advisory, information, training, and networking support.

An important project from the point of view of the development of Wrocław startups is the Wrocław Technology Transfer Center operating at the Wrocław University of Science and Technology. The task of WTTC is to commercialize the results of research work carried out at Wrocław University of Science and Technology, ensuring the effective transfer of knowledge and technology to the innovative economy, animating research and technological cooperation, and supporting the innovative activities of enterprises. The services offered by WCTT, in addition to assistance in technology transfer (e.g., advisory assistance, promotion of technological solutions), include assistance in the foreign expansion (e.g., research and analysis of foreign markets, audits, foreign industry trips), implementation of international research projects (e.g., support in the preparation of EU applications), expert assistance (e.g., preparation of analyses, development of applications, implementation of research). The center organizes various types of training, meetings, webinars, and several other events (WCTT, n.d.).

The last entity discussed is Concordia Design, a creative space focused primarily on the IT industry and media, advertising, art, and design. The offer includes modern office and coworking space, adapted to various needs (for individuals and larger teams, conference rooms, so-called hot desks), business consulting (guiding the organization through the entire design process), organization of various types of events, in which Concordia Design residents can participate (Concordia Design, n.d.). Concordia Design has an accelerator (Concordia Design Accelerator), which is the operator of the Poland Prize program, intended for foreign entities wishing to expand their startup activities to the Polish market. The funding is aimed primarily at entities operating in artificial intelligence, cybersecurity, and smart cities.

The entities mentioned above constitute only a tiny part of the business environment institutions and do not exhaust the entire set of entities creating the Wrocław startup ecosystem. Referring to the previously proposed division of BEIs in Poland, it should be noted that Wrocław entities combine various elements of the scope of activity, e.g., laboratory space with networking, training, consulting, office space with financial support, and many others.

6. BEI in the light of the results of empirical research

Analyzes regarding BEIs operating in the Wrocław startup ecosystem are worth enriching with the opinions of the entities that create this system.

The respondents' opinions indicate the importance of business environment institutions in creating and developing startups. The support from these entities greatly impacts the development of new ventures and is often invaluable. The critical areas of assistance mentioned by respondents included the following forms of support:

- financial support – necessary for startups to cover costs related to development, research, production and marketing;
- infrastructure support – access to specialized infrastructure, such as laboratories, which may be crucial for companies operating in fields requiring specialized equipment or premises;
- access to premises – assistance in obtaining appropriate places to work or run a business;
- training – organization of training that helps entrepreneurs acquire new skills and knowledge necessary for effective company management, e.g., in the field of marketing, acquiring customers, and raising financial resources;
- advisory support – covers business, legal, and marketing issues.

Among the most important BEI entities, respondents mentioned business incubators, accelerators, the National Center for Research and Development (NCBiR), development agencies, technology parks, technology transfer centers, foundations, and entities providing financial support. Respondents unanimously emphasized that their growing importance also results from the increasing complexity of the legal and business environment. Therefore, the help of business environment institutions becomes a key factor in facilitating the start and development of new companies, especially in the face of difficulties related to legal regulations.

Referring to BEIs in Wrocław, it should be noted that most respondents representing Wrocław startups used the assistance offered by local BEIs and were satisfied with it. The scope of support offered by these institutions was very diverse, including office rental, access to laboratory space, participation in training, workshops, webinars, legal and accounting advice, and access to financing. The most important institutions mentioned were ARAW, WPT, business incubators such as AIP at the Wrocław University of Science and Technology, inQUBE at the Wrocław University of Economics, DAIP, WCTT, and DFR. Some respondents emphasized the huge importance of the academic community and the possibility of using entities operating there, such as WCTT. Others drew attention to cooperation agreements with universities, enabling the use of laboratories and promotion on their premises.

Respondents also expressed their expectations regarding expanding the offer of business environment institutions. The suggestions included creating a database of programmers (facilitating access to programming specialists, which may be particularly useful for technology startups); financial support for new projects (more significant opportunities to obtain funds); meetings with practitioners (meetings with experienced entrepreneurs who can share their experiences and tips so that new companies can avoid making the same mistakes); greater promotion of local startups; organizing competitions or competitive events; selection of the best startup of the year, which may be an incentive for companies to develop further; workshops for startups with experienced business people who will help them understand key aspects of business and avoid common mistakes.

In general, the assessment of BEI by startup representatives is positive, but it should be noted that not all respondents used the help of business environment institutions. They pointed out the need for more access to appropriate information or ignorance about the scope of support offered by these institutions, which was an obstacle to using their services. These voices indicate the need to increase the availability of information about the offer of business environment institutions and to adapt their offer to the real needs of local entrepreneurs.

The experts' assessment was less positive – they mainly noted shortcomings in the offer, expressing the need to introduce clear communication and an audit program that would help assess support at the strategic level. They suggested that sharing experiences between institutions and startups can improve the effectiveness of ventures. Additionally, attention was drawn to the need for greater availability of funds and easier access to business angels.

BEI representatives pointed to the large number of supporting institutions in Wrocław – a unique situation in Poland. They emphasized the positive approach to customers and the important issue of customer service in English, which is particularly attractive to foreigners. According to BEI representatives, the institutions operate well, but there is room for improvement. The suggestions included better cooperation between these entities and better organization of activities to avoid duplication of ideas, e.g., by introducing a system for monitoring initiatives and creating a shared calendar of events, the management of which could be entrusted to, e.g. ARAW. Thanks to such a system, BEI could promote each other's initiatives, and reaching a wider audience with information would become more effective.

To sum up, in general, business environment institutions in the Wrocław startup ecosystem are assessed positively; there are many of them, and they fulfill their functions. Many companies use their assistance, i.e. financial support, access to laboratory space and specialized equipment, or advisory in such crucial things as taxes, forms of operation, or marketing. The support in many cases is crucial for startups' existence.

Nevertheless, BEI's actions should be verified and improved. This applies primarily to the flow of information between themselves and between them and the recipients of their support – startups. Moreover, the BEI offer should be enriched with opportunities to finance operations, as well as access to some experts and experienced entrepreneurs.

7. Summary

Startups have become a permanent part of the economic landscape of most countries in the world. They are characterized by a short period of operation, innovation, scalability, and operational uncertainty, which, combined with the changing and turbulent environment, makes support from entities filling the gap between market mechanisms and public administration activities – business environment institutions – helpful. The role of these entities is to assist in incubating and promoting entrepreneurship, infrastructure support, technology transfer and implementation of new technologies, creation of innovations, consulting, training, financial support, and assistance in establishing contacts. As peer-reviewed studies and rankings indicate, BEIs are integral to well-functioning startup ecosystems worldwide. Access and support from business environment institutions play a key role for startups, and their importance is constantly growing.

Wrocław is highly rated as a business-friendly place, including the development of startups, which is confirmed by the rankings of startup ecosystems, investment climate, innovation, and quality of life. The city offers many unique benefits that encourage entrepreneurs to develop their businesses. Wrocław is an open, innovative place with an excellent investment climate. A significant advantage is access to various business environment institutions, such as business incubators, access to laboratory and office spaces, as well as support in the form of consulting, training, mentoring, and networking, various sources of financing for startups are available.

Despite numerous advantages, some areas require improvement. This concerns limited access to experienced expert practitioners or some forms of financing, insufficient communication, which translates into a need for more information about the offers available to startups. A good solution could be a knowledge base concentrated in one place to prevent the dispersion of information (e.g., within the already existing startupwroclaw.pl website, a subpage available only to BEIs, where information about various events carried out by individual entities would be collected). Such a solution would benefit startups and business environment institutions, enabling them to coordinate better and promote their activities.

Greater integration of the startup environment is also a good idea. One way to achieve this goal may be for BEIs to create a shared space dedicated exclusively to startups. Such a space should enable the exchange of experiences, including negative ones, verification of ideas, organizing meetings with potential investors, and favor networking between entrepreneurs and BEI representatives.

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