

SILESIA UNIVERSITY OF TECHNOLOGY
SCIENTIFIC PAPERS

ORGANIZATION AND MANAGEMENT
Scientific paper no. 154

CONTEMPORARY MANAGEMENT

Edited by

Radosław WOLNIAK

Kolegium redakcyjne

REDAKTOR NACZELNY – Dr hab. inż. Barbara KULESZ, prof. PŚ
REDAKTOR DZIAŁU – Prof. dr hab. inż. Radosław WOLNIAK

**Wydano za zgodą
Rektora Politechniki Śląskiej**

ISSN 1641-3466

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Wydawnictwo Politechniki Śląskiej
Gliwice 2021

WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ
ul. Akademicka 5, 44-100 Gliwice
tel. (32) 237-13-81, faks (32) 237-15-02
www.wydawnictwopolitechniki.pl

Sprzedaż i Marketing
tel. (32) 237-18-48
wydawnictwo_mark@polsl.pl

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FOREWORD

Presented number of Silesian University of Technology. Scientific Papers. Organization and Management Series. Contemporary management. The number consists of 30 papers published by international authors.

The papers presented in the number concentrate on many topics connected with organization and management. The authors of paper concentrate on problems connected with: organization and management, anti-corruption systems. human resource management, public management, quality of services, quality management, logistics, marketing, business models, production management, innovations, financial management, Corporate Social Responsibility environmental management, quality management, sustainable management, change management, technology management and the impact of COVID-19 pandemic on management.

Radosław Wolniak

ORGANISATION'S COMMUNICATION ACTIVITY AND THE LEVEL OF PROCESS MATURITY – AN EMPIRICAL APPROACH

Barbara BIELICKA¹, Agnieszka GOŹDZIEWSKA-NOWICKA^{2*}, Tomasz JANICKI³

¹ WSB University in Toruń, Toruń; barbara.bielecka@wsb.torun.pl, ORCID: 0000-0003-2978-8893

² Bydgoszcz University of Technology, Bydgoszcz; agnieszka.gozdziewska@pbs.edu.pl, ORCID: 0000-0001-5949-3901

³ WSB University in Toruń, Toruń; tomasz.janicki@wsb.torun.pl, ORCID: 0000-0002-7717-2201

* Correspondence author

Purpose: The authors aimed to identify the characteristics of a process organisation, and to determine the organisation's activity in various areas, including communication.

Design/methodology/approach: The research methods used in the article was an online survey.

Findings: The conducted research is the first step in assessing the relations that occur between the level of process maturity of an organisation and the level of communication activity. In the surveyed organisations there is a high awareness of the need and importance of processes.

Research limitations/implications: The study of corporate image and the study of reputation and prestige in the area of internal communication activity. A group of about 64% of organisations declared such activity, although to varying degrees. About 33% of respondents declared these activities as strategic. It should be assumed that they are the result of image activities, activities focused on reputation and prestige. It can be assumed that these are activities of public relations or corporate communication. Admittedly, further research reveals the lack of certain processes, which are important and determine the strategic character of these activities (e.g., lack of CSR, lack of employer branding).

Practical implications: Achieving more and more process maturity through process improvement should be treated as a cyclical activity, which is oriented towards the continuous search for better solutions. Organisations that intend to improve their processes, and thus gain greater process maturity, should continually take care to shape open communication, both within the company and in the external environment.

Originality/value: Strategic achievement of an integrated state of internal and external communication is based on constructive dialogue and is determined by the number of different processes, the level of communication and the level of their process maturity.

Keywords: process maturity, stakeholder relations management, communication system.

Category of the paper: research paper.

1. Introduction

Nowadays, one of the most important concepts in the field of management and organisation is the process approach, which requires organisations to be active in many fields of activity. The functioning of contemporary organisations in competitive markets takes various forms. The triggering factor for different types of activity is market presence, staying in the market, and often developing a market position.

Companies exhibit different behaviours, ranging from evolutionary change models to planned change models. At present, it is more common to see companies planning their future market position, company development, or future success.

Planning for the future success of an organisation requires a holistic approach to the entirety of activities, which include many events in the internal and external environment of the organisation. This includes the multidimensional perception and definition of tasks and the organisation of work in many new sections in the organisation, where it has not operated before and yet maintained its position in the market. This requires organisations to apply multi-dimensional, multi-use and multi-objective processes, running through different routes and channels in the organisation. Not all organisations implement such changes, because such changes are not possible in all entities. These changes require certain specific conditions. However, the basis for the introduction of any modification in an organisation is information, the way it is acquired, processed, transmitted, the ability to send, receive, encode and decode it. These are all phenomena, tasks and activities that make up the processes of external and internal communication of the organisation.

One of the important factors determining the process maturity of an organisation and its levels is efficient communication in the organisation. Informing and communicating is the starting point of organisational development. Communication in an organisation is its foundation, the basis of marketization of inter-organisational relations (Grajewski, 2003, p. 127). There is no doubt that good information and communication in an organisation is the foundation on which organisations can develop their process maturity.

Good communication is considered to comprise processes which serve to 'create value' for the customer. This means that information and communication in a process organisation should strive to build relationships with internal and external customers, based on which networks of internal relationships and communication are created.

One of the most important issues is the activity of the organisation in communication processes, especially the way in which enterprises with a process orientation and a certain degree of process maturity operate.

Process orientation is undoubtedly an important and current topic, hence the research team decided to focus on this issue. At the turn of 2018 and 2019, a survey was carried out that covered 240 organisations. An online survey was used as the method of measurement. A total of 152 micro organisations (with 1 up to 9 employees), 43 small organisations (with 10 up to 49 employees), 16 medium-sized organisations (with 50 up to 249 employees) and 29 large entities (with more than 250 employees) were surveyed. As many as 199 entities provided primarily services, the others were mainly involved in the manufacture of goods. Most organisations (212) are domestic entities - without foreign capital. The respondents were people responsible for implementing processes, including process owners, project managers and process management specialists. The aim of the research project was to provide answers to the following questions: 'Does process orientation require special communication skills and competences from organisations?', 'Does the organisation's process maturity in communication constitute one of many maturity levels?' and 'Does it constitute the basis, the foundation for process maturity in other areas?'

In the first research part, the authors aimed to identify the characteristics of a process organisation, while in the second part they aimed to determine the organisation's activity in various areas, including communication, especially in the areas of building internal relations as well as in the areas of building external relations of the organisation.

2. Customer value as a result of process maturity

Value for the client, *i.e.*, the surplus of certain subjective benefits over costs, should not only be acceptable to the client, but also co-created by him. The client is increasingly taking the role of a prosumer and a proclient. This means that the organization's internal communication and information network has the ability to create internal relations with the client, which in fact serve the development of communication processes with stakeholders, not only internal, but primarily external. Organizations build various structures for external stakeholders. One of them are customers, media, suppliers, recipients, social and political environments, as well as hostile environments of the organization.

The contemporary customer accepts the value offered by the organisation, as he himself participates in its creation, through his participation, activity and involvement in market communication processes. However, it is in the interest of the organisation to strive to be present, not only in the market environment, but in the entire social communication system. This presence manifests itself through activity in CSR, public, and political areas. On the one hand, the organisation uses the system, and on the other hand, however, it is the creator of this social communication system. It aims at gaining, accepting and advocating not only customers, but also other participants of different audiences that are part of the social communication

system (Kotler, 2017, pp. 75-79). The customer value is thus reinforced, confirmed by other social environments (e.g., media).

Customer value is also the result of conscious, planned, continuously controlled efforts to build a corporate brand, which is a holistic, multidimensional view of one's own company.

A corporate brand refers to both external and internal stakeholders. These are employees, customers, suppliers, intermediaries, business partners, shareholders, society (Daszkiewicz, Wrona, 2014, pp. 28-29). The processes that build a corporate brand include:

- the process of creating a product/brand image,
- the process of creating a relationship with the client,
- the process of creating relations with the media,
- the process of creating internal media relations,
- the process of creating external media relations,
- communication process in crisis situations,
- employer's branding process;
- internal employer branding – for employees,
- external employer branding – for future employees,
- CSR (Corporate Social Responsibility).

Communication processes covering the above-mentioned areas, aimed at the entire society, focused on the value that unites all brands and allows them to speak as one to the client are known as Public Relations. Public Relations activities as a function of strategic organization/enterprise management are aimed at creating value for the recipient. There is a close correlation between the concept of Public Relations activities and the concept of corporate communication (Kuraszko, 2010, p. 26).

3. Public relations as an organization's social communication system

Tables, figures and formulas - continuous numbering in the text. As Krystyna Wojcik states: Public relations is a systematic and process-oriented activity - a system of activities within the scope of social communication, a social process of a constructive, reliable dialogue, (...). It is a conscious, purposeful/intentional, ethical activity - based on truth, consistency of words and deeds, openness in information and communication, partner treatment of the environment, responsibility towards it (Wojcik, 2015, p. 26).

Is an activity aimed at shaping the image/reputation and desired relationships between the organisation undertaking the activity (...) and those groups in its environment who feel affected by the actual and potential effects of its strategy (Wojcik, 2015, p. 26).

Public Relations is a methodical, planned, systematic activity based on research and analysis, social monitoring, management of communication in an organisation, participation in problem and strategic management, advising decision-makers in an organisation and influencing them to create desired situations, phenomena and structures in an organisation, as well as a culture oriented towards communities, society, environment, in a short-term and long-term perspective, using the achievements of all those sciences that create opportunities for effectiveness (Wojcik, 2015, p. 26).

Public relations is an activity that is permanent and long-term in the case of programmes aimed at corporate image, and limited in time in the case of (...) current programmes (Wojcik, 2015, p. 26).

The system of communication of mutual relations defined by Wojcik is based on informing, listening, communicating, taking into account the arguments of many groups on which the organisation depends and on dialogue. Dialogue is a basic communicative act occurring in conversation and then implemented in teams, processes, and in the system.

It is therefore worth considering how to create a social communication system for the organisation, where there are many social groups of different sizes, both inside and outside the organisation, so that it is based on dialogue. The strategic stakeholder management model presented in Figure 1 illustrates the importance of symmetrical two-way communication between an organisation's stakeholders and the need to gain legitimacy from market and non-market stakeholder groups (Cornelissen, 2012, p. 58).

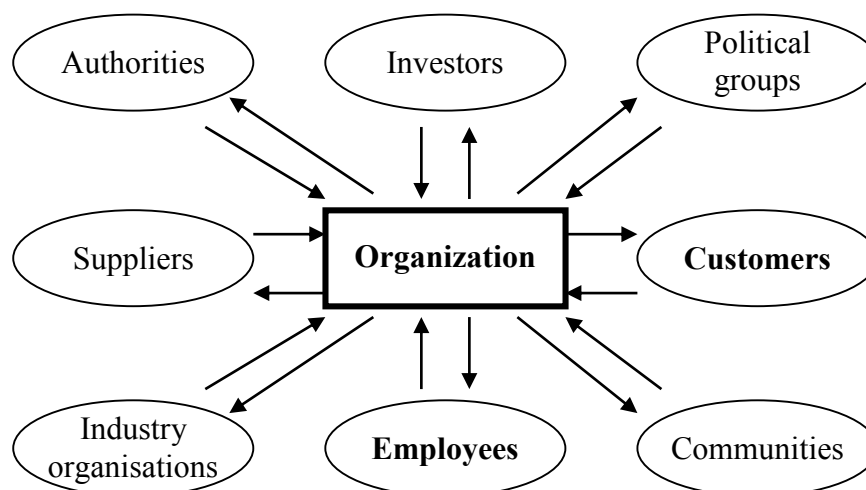


Figure 1. A stakeholder-driven strategic management model. Adapted from: “Komunikacja korporacyjna. Przewodnik po teorii i praktyce” by J. Cornelissen. Copyright 2012 by Publisher Oficyna a Woltares Kluwer business.

In the context of the above considerations, it is worth considering to what extent the surveyed organisations are prepared to undertake communication activities with stakeholders based on bilateral symmetrical communication with dialogue dominating.

4. Communication activity of the surveyed organisations

Internal communication is an extremely important element of every organisation. Modern companies are aware of the importance of communication with employees, which is why they aim to use communication tools effectively, not only to inform, but also to convey emotions and prepare for the implementation of organisational changes. A very important function of internal communication is to integrate employees around the company's strategy and at the same time create an organisational culture based on honesty and trust. Moreover, internal communication activities influence the relationship between employees and management, which shapes the company's image both internally and externally.

In the area of internal communication, most of the surveyed organisations declared that they undertake activities such as reputation and prestige research (65.82% of respondents), corporate image research (64.15% of respondents). However, 1/4 of respondents (24%) consider these activities as important (9.6%) and very important (13.3%) of operational significance. These results may indicate the involvement of the surveyed organisations in communication with an image profile (24.16%), corporate image research and 22.91% reputation and prestige research. There is no doubt that taking care of quality and reputation is as important as maintaining the high quality of products offered and services provided. Moreover, these activities can be a premise for the conclusion that these organisations are planning for future image success, the state of communication of these organisations is the beginning of internal image communication. The literature refers to such activities as internal relations. They form the foundation for strategic public relations activities.

About 35% of the respondents (35.41%) confirm that public relations activities are carried out at the strategic level of the organisation, half of them (17.5%) consider them to be very important of strategic importance and the same number (17.91%) consider them important of strategic importance. Detailed results of the internal communication activities of the surveyed organisations are presented in Table 1.

The below results correlate with the assessment of activities in the area of internal employer branding, *i.e.*, the concentration of activities in communicating internal stakeholders in order to create a brand value associated with the employee. And this, as a consequence, creates the image of a good employer. About 1/5 of the respondents (21.24%) consider these activities as strategically important (12.9%) and very important (8.3%).

Table 1.*Internal communication activity*

| Internal communication activities | Very important of strategic importance in % | Important of strategic importance in % | Very important of operational significance in % | Important of operational significance in % | Very important of functional significance in % |
|--|--|---|--|---|---|
| Media relations | 10.0 | 12.0 | 14.2 | 9.1 | 9.1 |
| Public relations | 17.5 | 17.9 | 12.9 | 10.4 | 8.3 |
| Crisis communication programmes | 9.6 | 15.0 | 14.1 | 11.3 | 7.9 |
| Corporate image research | 18.4 | 14.6 | 15.0 | 9.2 | 7.1 |
| Research on reputation and prestige | 18.3 | 15.8 | 13.3 | 9.6 | 8.8 |
| CSR | 8.8 | 11.2 | 12.5 | 7.9 | 6.3 |
| Internal employer branding | 8.3 | 12.9 | 13.3 | 10.4 | 5.8 |
| Merchandising | 9.5 | 10.0 | 9.5 | 11.3 | 8.3 |

Source: own elaboration based on a completed research project.

The consequence of properly implemented internal communication activities is a proper understanding of the tasks to be performed by employees and a related increase in productivity and quality of work. It also results in better integration among members of the organisation and allows them to express their own opinions. However, one of the most important benefits is that well-informed employees naturally become credible spokespersons for the organisation in relation to its external environment and positively influence the company's image. Referring to the above analyses, it is puzzling that there is such a large number of surveyed enterprises in which the above-mentioned internal communication activities do not occur at all. Figure 2 shows the percentage of companies in which individual activities are not implemented as part of internal communication.

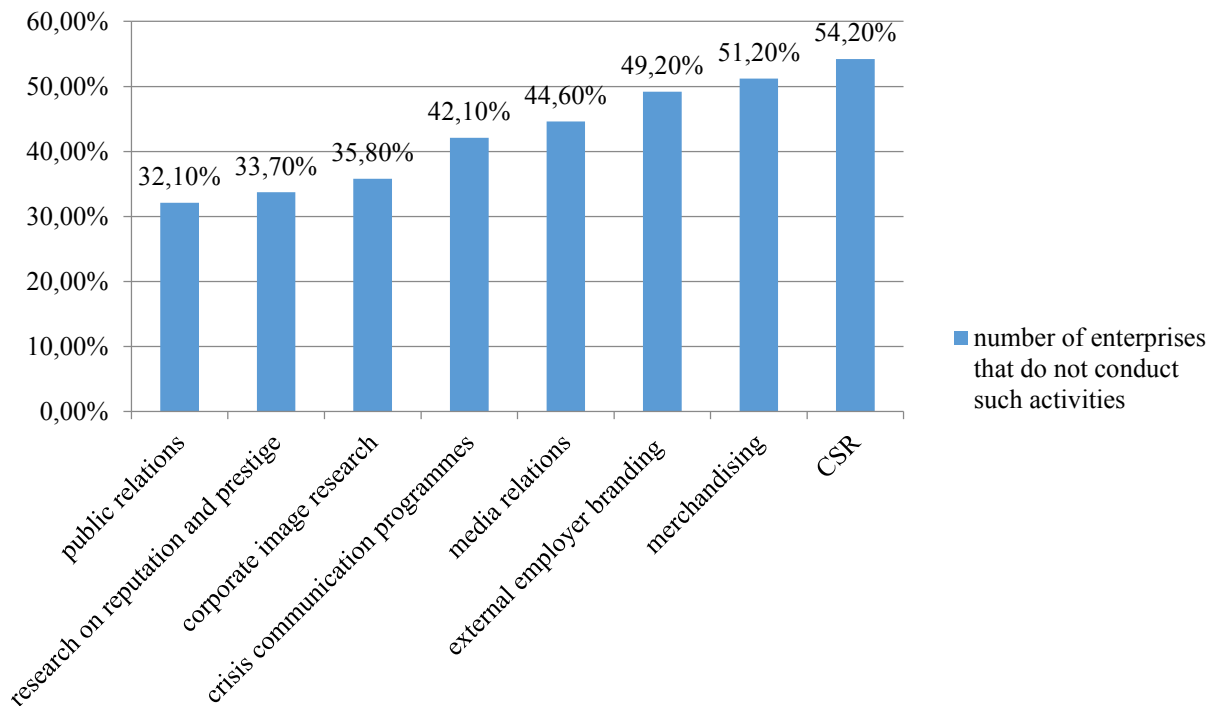


Figure 2. Number of companies without internal communication activities. Source: own elaboration based on a completed research project.

The largest number of enterprises participating in the survey do not implement a CSR strategy and merchandising as part of their internal communication, this is 54.2% and 51.2% of companies respectively. The smallest percentage of enterprises are organisations that do not feel the need to carry out activities such as public relations (32.1%) and reputation and prestige research (33.7%).

External communication in the organization has an equally important role as internal communication. It should be emphasized that the way in which the company communicates with the environment has a decisive impact on shaping its image. It shows the values of the company, shows its intentions, presents goals and ideas. The purpose of the company's communication is to interact with the environment. It is both the transfer of information outside, as well as receiving and analysing feedback about the company or its products. When analysing the activities that enterprises did not implement as part of internal communication, it should be noted that similar answers were given also in the context of external communication. Figure 3 shows the percentage of the number of enterprises in which individual activities are not implemented as part of external communication.

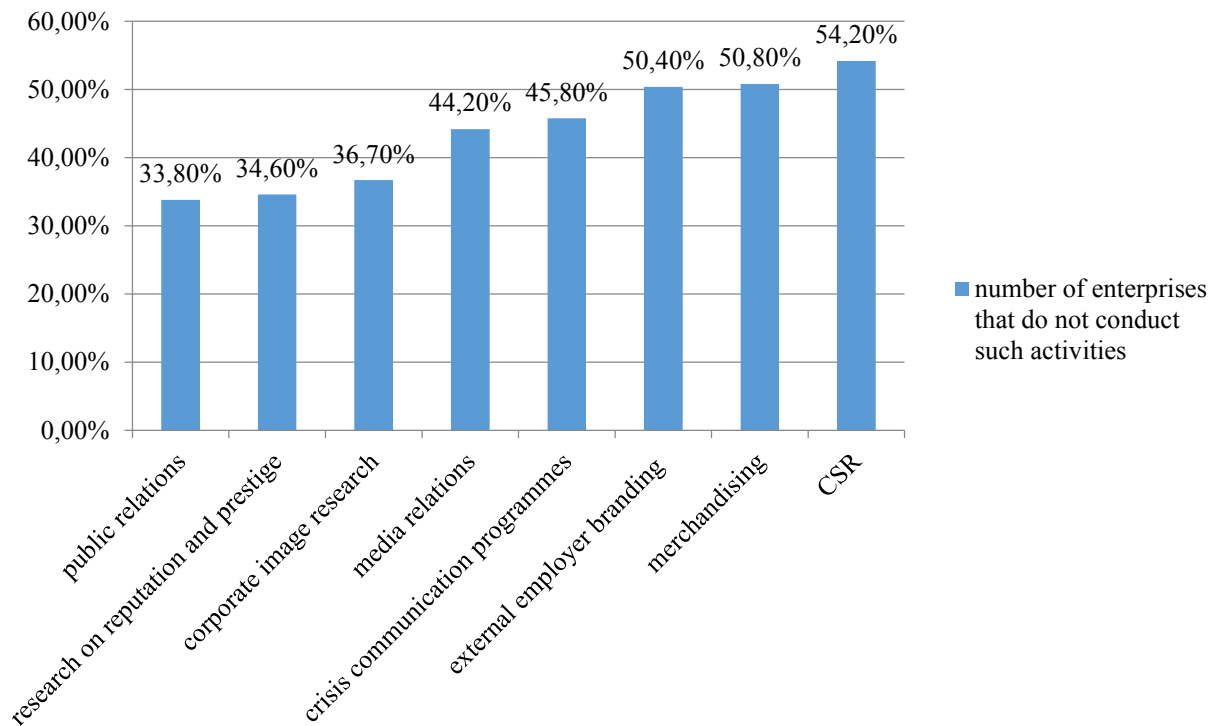


Figure 3. Number of enterprises where no activities in the field of external communication are conducted. Source: own elaboration based on a completed research project.

It turns out that more than half of the entities surveyed do not consider it important to inform external stakeholder groups about CSR strategies or merchandising. However, reputation and prestige research and public relations are activities that only one third of the surveyed companies do not undertake. It is very worrying that so many companies are still not aware of the fact that their success in the economic sphere is conditioned also by some kind of social acceptance. That is why proper communication between companies and their closer and further environment is such an important issue nowadays. It is worth emphasising that the lack of communication is also a kind of message to the environment, which carries the message that a given organisation does not care about the opinion of its recipients. There is no doubt that every company that wants to operate efficiently on the market and also intends to achieve its strategic objectives should devote a lot of energy to creating proper relations with its environment. The very manner of communication will have a decisive influence on the formation of the company's image.

Table 2 presents the percentage of respondents that define internal communication activities as strategic, operational and functional.

Table 2.
External communication activities

| Internal communication activities | Very important of strategic importance in % | Important of strategic importance in % | Very important of operational significance in % | Important of operational significance in % | Very important of functional significance in % |
|--|--|---|--|---|---|
| Media relations | 11.3 | 15.0 | 11.7 | 12.5 | 5.4 |
| Public relations | 17.5 | 17.1 | 12.5 | 9.1 | 10.0 |
| Crisis communication programmes | 12.1 | 8.3 | 15.4 | 9.6 | 8.8 |
| Research on corporate image | 18.3 | 15.8 | 12.5 | 8.8 | 7.9 |
| Research on reputation and prestige | 18.3 | 15.8 | 13.8 | 6.6 | 10.8 |
| CSR | 8.3 | 9.6 | 14.2 | 5.8 | 6.7 |
| Internal employer branding | 9.2 | 10.0 | 14.6 | 8.3 | 7.5 |
| Merchandising | 8.0 | 12.9 | 12.1 | 10.4 | 5.8 |

Source: own elaboration based on a completed research project.

While analysing data presented in Figure 3 and Table 2, it should be noted that half of the surveyed companies declared that such activities as CSR, employer branding, or merchandising do not occur in their organisations. Also, a large group of the surveyed (about 40%) declared the lack of crisis communication activities both inside and outside their organisations. This means that despite the low communication activity of the surveyed organisations, internal crisis communication activities are undertaken to various degrees by 57.9% of respondents, and external by 54.1% of respondents.

Of the group active in the area of internal crisis communication, 24.6% consider these activities important and very important of strategic importance, while 20.4% consider them important and very important of strategic importance externally.

It may be assumed that these companies are preparing for crisis communication in the future, creating the so-called ‘communication plans’ in case of various (probable) crisis situations.

More than 60% of the surveyed companies declared that they conduct communication activities of a public relations type: in the internal area – 68%, in the external area – 66.2%. Very important and important of strategic importance are 35.4% in the internal area and 34.6% in the external area.

The above result is correlated with the data on the organisation image survey and the reputation and prestige survey. Involvement in communication activities at the strategic level of the surveyed organisations is presented in Table 3.

Table 3.

Public relations of the surveyed organisations (strategic level)

| | Internal in % | External in % |
|------------------------|----------------------|----------------------|
| Public Relations | 35.4 | 34.6 |
| Researching image | 33.0 | 34.1 |
| Researching reputation | 34.1 | 34.1 |
| Media Relations | 22.0 | 26.3 |
| Employer branding | 21.2 | 19.2 |
| Crisis relations | 24.6 | 20.4 |

Source: own elaboration based on a completed research project.

Although the surveyed organisations declared the above activities as important and very important at the level of company strategy, the results of Table 3 show that strategic activities cannot be developed without engaging in all internal and external areas. It can be considered that a group of 10-15% of the surveyed organisations declare such activities, but the level of these activities does not correspond to the strategic ones.

5. The relationship between the level of process maturity and the organisation's activity in the area of communication

The CMMI organisational process maturity model (Bitkowska, et al., 2011, p. 64) was used to assess to what extent the surveyed companies demonstrate process maturity in the most important business priority, which is creating value for the organisation's internal and external customers. This model provides five levels of maturity.

Table 4.

Five levels of business maturity

| Level | Characteristics |
|--------------|--|
| Level I | <ul style="list-style-type: none"> • random, disorganized, often chaotic processes • lack of process awareness |
| Level II | <ul style="list-style-type: none"> • partially organized, repetitive processes • no description of processes, no measures • process awareness appears |
| Level III | <ul style="list-style-type: none"> • organized, identified but not measurable processes • full awareness of the existence of processes appears in the organization |
| Level IV | <ul style="list-style-type: none"> • the measurement and process system is defined • information is translated into management decisions • all processes are identified • process owners exist |
| Level V | <ul style="list-style-type: none"> • the organization is aware of the processes taking place in it • strategic goals relate to individual processes • processes are constantly improved |

Adopted from: "The State of Business Process Management" by C. Wolf and P. Horman. Copyright 2011 by Difin.

A detailed analysis of the surveyed companies in terms of their process maturity has been presented by the authors in a separate work (Tylzanowski, 2020, pp. 45-50).

Whether the organization has strategically achieved an integrated state of internal and external communication, or functions in the organization's social communication system based on constructive dialogue, is determined by the number of various processes, the level of communication and the level of their process maturity. These are processes such as internal and external media relations, external and internal crisis relations, external and internal employer relations, internal and external image research, internal and external reputation and prestige research, CSR, merchandising.

Table 5.

The impact of building relationships on the formation of process maturity of the organization

| | Building internal relations | | | | | Building external relations | | | | |
|--|-----------------------------|-------|-------|-------|------|-----------------------------|-------|-------|------|------|
| | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| Companies considering themselves as non-processing organisations | 33.6% | 32% | 23.8% | 6.5% | 4.1% | 25.4% | 32% | 27.9% | 9.8% | 4.9% |
| Companies considering themselves as processing organisations | 18.7% | 39.8% | 28.8% | 10.2% | 2.5% | 34.8% | 44.1% | 14.4% | 5.9% | 0.8% |

Source: own elaboration based on a completed research project.

A very important aspect affecting the creation of process maturity is the building of relationships, both internal and external. Among all the companies surveyed, less than 51% of the respondents emphasise that their organisation is not considered to be process-oriented. Analysing the results in Table 5, a certain trend can be observed. Namely, organisations that do not consider themselves process-oriented believe that building relationships both internally and externally affects the creation of process maturity of the organisation in a very similar way. Meanwhile, process organizations clearly emphasize the power of positive influence on the creation of process maturity located on the side of external relations.

Achieving more and more process maturity through process improvement should be treated as a cyclical activity, which is oriented towards the continuous search for better solutions. There is no doubt that organisations that intend to improve their processes, and thus gain greater process maturity, should continually take care to shape open communication, both within the company and in the external environment.

6. Conclusion

The conducted research is the first step in assessing the relations that occur between the level of process maturity of an organisation and the level of communication activity. In the surveyed organisations there is a high awareness of the need and importance of processes.

Many of them are structured processes, but not all of them are measurable. Some processes are characterised by randomness.

A positive conclusion is the study of corporate image and the study of reputation and prestige in the area of internal communication activity. A group of about 64% of organisations declared such activity, although to varying degrees. About 33% of respondents declared these activities as strategic. It should be assumed that they are the result of image activities, activities focused on reputation and prestige. It can be assumed that these are activities of public relations or corporate communication. Admittedly, further research reveals the lack of certain processes, which are important and determine the strategic character of these activities (e.g., lack of CSR, lack of employer branding). However, a group of about 10% of the surveyed organisations are certainly organisations reaching Level IV of process maturity. The remaining organisations are at Levels II and III of process maturity according to the CMMI model.

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PARTNERS IN EDUCATION – DEVELOPMENT OF GRADUATES COMPETENCIES

Agnieszka CZERWIŃSKA-LUBSZCZYK^{1*}, Michalene GREBSKI²,
Dominika JAGODA-SOBALAK³

¹ University of Technology and Humanities in Bielsko-Biała, Poland; aczerwinska@ath.bielsko.pl,
ORCID: 0000-0001-8100-8802

² Colorado Mesa University, USA; mgrebski@coloradomesa.edu, ORCID: 0000-0002-3487-4473

³ Opole University of Technology, Poland; d.jagoda@po.opole.pl, ORCID: 0000-0003-3085-6603

* Correspondence author

Purpose: The aim of this paper is to investigate the possibility of using the concept of "Partners in Education" as a solution for preparing the students to successfully enter the workforce.

Design/methodology/approach: Desk Research Method and survey are used. Paper is based on Partners in Education's documents (local non-profit organization) and results of empirical research.

Findings: The study includes the review of the results of empirical research carried out in Poland, which indicated the existence of competence gaps of graduates from technical universities. The study also indicated the need to constantly monitor the competence gaps and correct the education programs on this basis. One of the tools to improve the process of updating curricula may be the practice used in the USA.

Originality/value: The main goal of any system of education in any region is to prepare students to successfully enter the workforce. At the present time, the economy is changing rapidly. The educational and training needs are constantly changing. The authors pointed to a good practice used in the USA, as an example of a solution for preparing the students to successfully enter the workforce.

Keywords: Competence, engineer, university-business cooperation.

Category of the paper: Research paper.

1. Introduction

Rapid changes in the economy are challenge for enterprises (Michna and Kmiecziak, 2020; Nürk, 2021; Kmiecziak et. al., 2012). It requires changes in education. This is true at every level of education from vocational programs through engineering professionals (Sabirova et al., 2019). Training and retraining the workforce is a slow process requiring a few years. There is

a need for some kind of organization collecting information from industry related to the forecasted needs of the workforce. This process is beneficial for the local economy as well as local communities. Participating industries benefit by being able to hire a qualified workforce without a need to retrain. The educational institutions (career and technology centers, community colleges and universities) are benefiting by receiving guidelines related to curriculum development. By constantly updating the curriculum to comply with needs of industry, the educational institutions fulfill their goals better. This process allows educational institutions to maintain a high employment rate of graduates. This process decreases the unemployment rate in the region and contributes to economic prosperity.

The main focus of this research project is to evaluate the possibility of using the "Partners in Education" (PIE) concept as a solution to better prepare students to successfully meet the demand of the workforce. The article presents a fragment of international research on the competences of engineering graduates required by the industry. Competency gaps need to indicate directions of changes to be implemented in education. One of the tools to improve the process of updating curricula can be the practice used in the USA under umbrella of Partners in Education.

The reason for undertaking this research project is the good result in the USA in the field of university-business cooperation and innovation. The Global Competitiveness Report ranks the USA second in terms of cooperation between universities and industry (University-Industry collaboration in R&D under the 12th pillar: Innovation). The overall Global Innovation Index 2020 ranks the US in third place. For comparison, Poland is only in the 89th position regarding collaborations between universities and industry. (The Global Competitiveness Report). At the same time Poland is listed in 38th position in the Global Innovation Index 2020.

2. Theoretical background

Universities aims at development of competences and skills, corresponding to the characteristic of the future professional activities of graduates (Choe and Borrego, 2020; Dubovikova, 2019). In the traditional system of education, students mostly acquire theoretical skills and competences (Dubovikova, 2019). Presently we need interdisciplinary, competences and practice-oriented approach to the education (Fedoseeva et al., 2019; Ghonim and Eweda, 2019; Srgeeva et al., 2019). Ghonim and Eweda (2019) notice also the necessity of real-world projects, which should be included in curricula for engineers. Fedoseeva et al. (2019) is also emphasizing the importance of teamwork skills, which could be developed by participation in research projects, internships, sports and other university group activities.

Competences includes aspects of knowledge, abilities, skills and personality characteristics (Syahmaidi et al., 2019). Competencies of engineering graduates include: "theoretical knowledge, skills and ability, practical experience, method of training and method of implementation, activity, attitude and soft skills". Dubovikova (2019) divides engineering competences into: universal competences ("general scientific, social, personal, non-technical") and professional competences ("general professional and major-specific").

Competences should reflect the needs of the job market. Balve and Ebert (2019) focused on a wide range of graduate competences, required by the industry. They divided them into four groups: professional competences (e.g., knowledge of engineering methods and knowledge of IT), methodical competences (e.g., analytical skills and problem-solving ability), social competences (ex. communication ability and oral expressiveness), self-competences (e.g., adopt to changing circumstances and decision-making ability). The feedback from industry confirmed that industry values soft skills as much or even more than hard skills.

University-industry cooperation brings benefits for both parties. For universities, it is an opportunity to verify the theoretical assumptions in real conditions. This is also an opportunity for students to develop practical skills and for faculty to receive guidelines related to curriculum development (Czerwińska et al., 2020). For entrepreneurs it is an opportunity to attract apprentices and trainees as well as qualified employees. University-industry cooperation is the synergy of modern knowledge and experience (Jagoda-Sobalak et al., 2018).

University-industry cooperation is "a model of inter-institutional agreements between organizations of fundamentally different nature, which may have different goals and adopt very different formats" (Tatum et al., 2018). University-industry cooperation includes formal and informal relationships and interactions between the parties involved (Raesfeld & Fuentes, 2018).

University-industry cooperation covers many cooperation areas. During the literature review, it became apparent that the different authors focus on one area or number of different areas of Industry – University cooperation. D'Este and Patel (2007) focused on conducting joint research, staff exchange, joint patents and publications and opening spin-offs. Informal relations are important also: participation in conferences and meetings (Kuna-Maszałek, 2013). Gill et al. (2007) focus on relationships that are based on relationships between people. For example, delegating university employees to industry or inviting industrial specialists to the university (Kuna-Maszałek, 2013). Fajfer, Koliński, Kolińska (2013) analyzed a number of areas of cooperation. Industry-University relationships in the field of training and joint projects were the most common type of cooperation. Based on research results from Mexico, Raesfeld and Fuentes (2018) highlighted the importance of student internships. Other popular and effective forms of cooperation are faculty exchange and research and development cooperation. However, the authors emphasize "the sporadic nature of these activities and the lack of continuity in their initiatives". Epure (2017) focused on the education process (innovation in

teaching) and the graduates' integration into the labor market. Liu, Li and McLean (2017) focused on the many aspects of educating students.

3. Results of survey

The research described in this article was conducted in 2020 (Czerwińska-Lubszczyk et al., 2020). The criteria for selecting enterprises were based on the following:

- Compatibility criterion – companies hiring engineering graduates.
- Diversity criterion – enterprises represent various industries.
- Willingness of the company to participate.

The research was conducted at various enterprises located around two technical universities in Poland. The survey questionnaire was addressed to owners, entrepreneurs or managers. The authors used the snowball sampling method. University employees having a working relationship with industry helped in the selection of enterprises for collecting research data. The data was collected from eighty-six companies hiring engineering graduates. The surveyed companies represented very small, small, medium and large companies.

The study included:

- Identification of skills and competences relevant and important to industry. The individual areas of knowledge/skills were assessed on a scale from 1 to 5, where 1 meant an unimportant area and 5 meant a very important area.
- Assessment of the level of preparation of engineering graduates in specific areas of knowledge/skills and competencies. A scale from 1 to 5 was also used, where 1 meant unprepared and 5 meant very well prepared.

The results are shown in Table 1. The assessment numbers in Table 1 represent mean values.

Table 1.

Graduates' competences: value to industry and level of preparation of engineering graduates

| Item | Value to industry | Level of preparation of graduates |
|--|-------------------|-----------------------------------|
| Knowledge of science, mathematics and engineering principles | 4.65 | 4.20 |
| Engineering design and analysis | 4.80 | 4.12 |
| Humanities (literature, writing, speech, etc.) | 4.10 | 4.13 |
| Design of processes, systems or devices | 4.55 | 4.44 |
| Arts | 3.35 | 3.07 |
| Teamwork | 4.52 | 3.85 |
| Formulation of problems and methodologies | 4.40 | 3.83 |
| Engineering Ethics | 4.15 | 4.08 |
| Communications | 4.61 | 4.52 |
| Social and behavioral sciences | 4.45 | 4.02 |
| Global and societal contexts | 4.42 | 4.63 |
| Lifelong learning | 4.53 | 4.02 |
| Computers and related technologies (tools) | 4.95 | 4.74 |

Cont. table 1

| | | |
|---|------|------|
| Broad general subject knowledge | 4.30 | 4.61 |
| Professional work-related skills | 4.60 | 4.16 |
| Articulating yourself using writing skills | 4.45 | 4.04 |
| Articulating yourself orally | 4.74 | 4.05 |
| Thinking critically and analytically | 4.43 | 4.12 |
| Using quantitative analysis to solve problems | 4.54 | 3.64 |
| Using computers and IT | 4.91 | 4.74 |
| Works well with others | 4.84 | 3.55 |
| Solving real-world problems | 4.55 | 3.52 |
| Developing personal ethics and values | 4.46 | 3.03 |
| Contributing back to society and community | 4.04 | 3.93 |
| Has practical skills necessary to obtain employment | 4.77 | 3.52 |
| Can define the problem | 4.37 | 3.3 |
| Is a problem solver | 4.65 | 3.43 |
| Understands global concerns | 4.48 | 4.27 |
| Understands environmental concerns | 4.04 | 3.94 |
| Understands scientific principles | 4.05 | 4.04 |
| Understands scientific methods | 4.05 | 3.78 |
| Applies scientific principles | 4.16 | 3.87 |
| Applies scientific methods | 4.01 | 3.56 |

From the results of the conducted research, the authors (Czerwińska-Lubszczyk et al., 2020) concluded that companies expect graduates to have a wide range of skills and expertise from the application of modern technologies to soft skills. The highest mean values correspond to the following: Computers and related technologies (4.95), Using computers and information technology (4.91), Works well with others (4.84), Engineering design and analysis (4.80).

As a result of the comparison of "value to industry" and "level of preparation of graduates", competency gaps were identified. The biggest competency gaps identified by the research project are as follows: Development of personal ethics and values (1.43), Works well with others (1.29); Has practical skills necessary to obtain employment (1.25), Is a problem solver (1.22).

The presented research results indicated the existence of significant competency gaps of engineering graduates (gaps between graduates' preparation and industry expectations). Addressing the competency gaps requires constant monitoring of the Engineering curriculum so that the Engineering curricula corresponds to the current needs of the industry. One of the tools to improve the process for updating curricula can be the practice used in the USA: Partners in Education.

4. Partners in Education

Partners in Education (PIE) is a local non-profit organization, incorporated in 2000 under the name (Partners in Education...). It consists of "business and education partners who are focused on ensuring that all students leave school with the academic, technical and employability skills necessary to be successful in the 21st century".

The members of PIE are volunteers representing industry as well as educational institutions. Examples of educational partners include: Keystone Job Corp Center, Luzerne County Community College, Pennsylvania State University Hazleton, Hazleton Area School District, Weatherly Area School District, Crestwood School District.

There is a Student Advisory Committee comprised of representatives from local school districts (Hazleton Area, Weatherly Area, and Crestwood High Schools). All students have an opportunity to participate in various business projects as well as meaningful career related activities.

The mission of PIE includes "providing the students with an understanding of the career opportunities available in Northeastern Pennsylvania and enabling students to remain in the area and fulfill their career goals".

Funding needed to sponsor some of the projects are normally secured from grants and industry donations. Projects and activities sponsored by PIE include the following topics and goals (Partners in Education...):

- Promote career awareness among students and help to improve the skills necessary to enter the job market.
- Develop career and technical education, which addresses local job skill needs.
- Familiarize students with career options emphasizing the job respectability.
- Broaden and foster cooperation between the community and the educational institutions.
- Promote projects that involve parents in the education of their children.
- Provide decision making opportunities and leadership experience which increase confidence and self-esteem of students.
- Help students develop pride in themselves, their school, and their community.

For example, Greater Hazleton Partners in Education is hosting its annual Girl Power in STEM (Science, Technology, Engineering, Mathematics) and Spring Symposium. The symposium is a seminar that brings together professional women in the science, technology, engineering and math fields to motivate local high school girls to pursue careers in those related field. The goal is "to bring the women and girls together and create an atmosphere for sharing information. This is a great opportunity for young women who may be interested in science, technology, engineering or math to be able to connect with women who are already paving a path in those fields" (Partners in Education...).

According to an Executive Summary done by the US Department of Commerce, Economics and Statistics Administration, “the Office of the Chief Economist (OCE) noted that America's STEM workforce is crucial for generating new ideas and providing critical thinking necessary in the modern economy. However, women continue to be underrepresented in STEM jobs and among STEM degree holders”. During “Girl Power in STEM”, the professional women “share their experiences and expertise through brief presentations and interactive panel discussions. Attendees will also have the chance to have one-on-one conversations with local businesswomen and representatives from several educational institutions” (Partners in Education...).

5. Discussion and conclusions

The main goal of any system of education in any region is to prepare students to successfully enter the workforce. At the present time, the economy is changing rapidly. The educational and training needs are constantly changing. The main goal of this research project is to investigate the possibility of using PIE model to better prepare students to successfully enter the job market.

PIE consists of business and education partners. The main goals are ensuring that all students have “academic, technical and employability skills necessary to be successful in the 21st century”. The members of PIE are volunteers representing industry as well as educational institutions. Funding to sponsor projects or activities is secured from grants and industry donations.

The paper refers to the results of empirical research carried out in Poland, which indicate the existence of competence gaps of engineering graduates. There is a need for constant monitoring and correcting of engineering education to comply with expectation of industry. One of the methods to improve the process of updating curricula may be the model of PIE in the USA.

Acknowledgements

The authors are grateful to Professor Wes Grebski (The Pennsylvania State University) and Iwona Łapuńska, PhD (Opole University of Technology) for the cooperation in collecting valuable data.

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DEVELOPMENT OF E-SERVICES IN THE PROCESS OF POST-MINING AND POST-INDUSTRIAL AREA MANAGEMENT IN THE SILESIA REGION

Adam HAMERLA

Central Mining Institute, Katowice; ahamerla@gig.eu, ORCID: 0000-0002-9105-6856

Purpose: the main purpose of this paper is to present the idea of a new e-service concerning post-mining areas, which is being developed in the Silesian Voivodeship and which is expected to increase their attractiveness.

Design/methodology/approach: The new e-service is based on the development of a system for the inventory and valorisation of post-mining areas. In the course of the work, a field inventory of the areas is carried out, which involves collecting information on their location, configuration in relation to main transport routes, surface configuration and the manner of their management. These data are collected in a database system, which is additionally linked with algorithms enabling benchmarking, assessment of ecosystem services and evaluation of investment attractiveness. All of this will create a new e-service that will enable decisions to be made regarding their further use by various stakeholders.

Findings: The value of post-mining and post-industrial areas in the processes of economic transformation of the Silesian Voivodeship and the needs of stakeholders for information regarding these areas.

Research limitations/implications: The results provide a basis to improve the effectiveness of regional development planning, especially solutions for SME involvement and cooperation. The results confirm, that a detailed study of entrepreneurs' needs should be included as the main instrument for the implementation and for gaining reliable information on the effectiveness of implemented solutions in the field of innovation support.

Practical implications: The Silesia Voivodeship has a large number of post-industrial areas, for which the state and degree of degradation is often undefined. Building new e-services for a region in transition is an important factor for its competitiveness. The OPI-TPP 2.0 service allows the valorisation of sites and additionally provides information to potential investors on the necessary planning, investment and environmental measures.

Originality/value: The contribution of the research to the development e-services in post-mining land management.

Keywords: e-service, post-mining, post-industrial area, OPI-TPP 2.0.

Category of the paper: review paper.

1. Introduction

Economic and social transitions related to the process of fair transformation have led to an increased awareness and need for requirements concerning post-industrial and post-mining areas. The problems of deindustrialisation: structural unemployment, decapitalised technical infrastructure, recession of enterprises and liquidation of entire industrial centres, most frequently concern post-industrial zones located in highly urbanised areas and trigger crisis situations in the spatial, economic, social and environmental spheres. In the majority of European countries, measures have been implemented for years with the aim of restoring brownfield sites to local communities. Their revitalisation is related to transformation of these areas into modern economic, residential, cultural or leisure space. Actions aimed at the spatial and functional transformation of post-industrial sites were already undertaken in Western Europe in the 1970s and 1980s. In case of Central European countries, projects to revitalise post-industrial sites have been carried out since the 1990s, and in recent years they have become one of the most important factors in the development and reimagination of cities (Domański, 2009).

The Silesian Voivodeship features the largest area of post-industrial and post-mining land in the country, which until now has not been perceived as attractive for creating new locations. Their number and area will be constantly increasing in relation to the fair transformation process. Those areas usually cause space degradation, which has a negative effect on the image of the region and its competitive position. Revitalisation of post-industrial sites, which also includes post-mining areas, is an opportunity to reimagine them, i.e. giving them new social and economic functions, improving their aesthetics and the quality of life. Revitalisation of these post-industrial sites plays an important role not only in Poland but also in Europe, as it helps to avoid the growth of urban sprawl and to improve the quality of the urban environment. Revitalisation thus fosters the conditions necessary for sustainable development (Każmierczak, 2014). Revitalisation of post-industrial sites requires an efficient and effective management process, with development planning of these sites as a crucial element for success. Such planning should be preceded by identification of the sites in question and their valorisation, including an assessment of the development potential of a given site.

The aim of the article is to present a solution developed in the Silesian Voivodeship for conducting the process of identification and valorisation of post-industrial and post-mining areas in the form of a new e-service.

2. The impact of transformation on post-industrial sites in the Silesian Voivodeship

The development of the Silesian Voivodeship has been strongly influenced by traditional industries, mainly hard coal mining and metallurgy. Restructuring processes of hard coal mining and metallurgy initiated a period of very significant transformations in the economic sphere of individual cities of the Silesian Voivodeship, which are currently being continued as a process of just transformation (WWF, 2021). Liquidation processes in hard coal mining are the effect of that. The concentration of industry on such a small area has contributed to a significant transformation of the natural environment, resulting in the creation of extensive industrial heaps, pits and sinkholes. Saline mine waters discharged into surface waters are also a threat to the environment. Virtually every town in the Upper Silesian Coal Basin has within its borders areas directly or indirectly related to mining activities which require a process of revitalisation and reconversion towards new economic activities or provision of ecosystem services (CEC, 1990). There is a lack of a complete, systematized and publicly available valorisation of brownfield sites, including information on their value for the economic sector, the identification of which could make a real difference and increase the pace at which they could be returned to economic use. Dispersed information, also held by private entities, is a serious barrier to the redevelopment of these sites. From this perspective, full utilisation of the potential of post-industrial sites in Silesia will require the implementation of a long-term investment policy, sustainable space management, as well as an appropriate, data-driven system for the distribution of funds to restore their functions (Programme, 2008). Therefore, it is extremely important to take action and to provide appropriate tools which, equipped with data, will support the process of restoring post-industrial sites to economic circulation while preserving and strengthening their value in terms of infrastructure, space, environment and culture.

According to the data of the Ministry of Agriculture and Rural Development published in studies (CSO, 2019), there were 5269 ha of devastated and degraded land in the Silesian Voivodeship in 2018, which is about 0.43% of the area of the Voivodeship, and in 2020 this figure decreased slightly to about 0.40% (CSO, 2020). In the whole country this percentage is more than twice lower (Table 1).

In terms of the total area of land that requires rehabilitation, the Silesian Voivodeship is ranked 3rd in the country. That area has been growing at least since 2010, whereas a decrease can be observed at the more general, national level.

Table 1.

Devastated and degraded land requiring rehabilitation according to Polish Classification of Activities in 2006, 2018, 2019

| Year | Total [ha] | Thereof as a result of the following activities | | | | |
|---------|------------|---|-----------------|-----------------------|-----------------------------------|------------|
| | | Mining and extraction of raw materials | | Metal production [ha] | Energy, gas and water supply [ha] | Other [ha] |
| | | Energy [ha] | Non-energy [ha] | | | |
| Poland | | | | | | |
| 2006 | 65143 | 12646 | 27347 | 179 | 999 | 23974 |
| 2018 | 61863 | 11369 | 29658 | 126 | 790 | 19920 |
| 2019 | 62089 | 12024 | 29976 | 123 | 939 | 19027 |
| Silesia | | | | | | |
| 2006 | 4717 | 2251 | 1910 | 173 | 178 | 205 |
| 2018 | 5269 | 2865 | 1988 | 101 | 153 | 162 |
| 2019 | 4982 | 2313 | 2250 | 98 | 153 | 168 |

Source: (GUS, 2019).

Mining, especially hard coal mining, which is responsible for almost the entire increase in the area of land requiring reclamation, remains the main cause of land degradation and devastation in the region. Several percent of the degraded or devastated land area is reclaimed annually (Table 2). In 2016-2018, the amount of reclaimed land decreased more than twofold, when compared to 2005-2015, and the amount of land developed per year has generally been decreasing since at least 2000. The method of land reclamation does not always meet the needs of natural environment protection. In terms of the total area of recultivated land in 2018, the Silesian Voivodeship was in the 13th place in the country, and in terms of the area of developed land, in the 6th place. The rate of reclamation and development of degraded land increased to 207 ha/year in 2019 against 65 ha/year in 2018.

Table 2.

Devastated and degraded land requiring rehabilitation and rehabilitated land in Silesia Voivodeship

| Item | 2000 | 2005 | 2010 | 2015 | 2018 | 2019 |
|--|------|-------|------|------|------|------|
| Land requiring rehabilitation (at end of year) | 5828 | 4602 | 4372 | 4889 | 5269 | 4982 |
| Devastated | 4842 | 43835 | 3668 | 3812 | 4182 | 3564 |
| Degraded | 989 | 767 | 704 | 1077 | 1087 | 1418 |
| Land rehabilitated during the year, including: | 298 | 114 | 89 | 108 | 39 | 168 |
| For agricultural purposes | 17 | 23 | 28 | 41 | 5 | 21 |
| For forestry purposes | 231 | 35 | 14 | 50 | 9 | 28 |
| Developed land | 255 | 55 | 39 | 27 | 26 | 39 |

Source: (GUS, 2019).

The region lacks detailed registers of brownfields and degraded areas, as well as an updated system collecting information on these sites, so the CSO data can only be treated as estimates. The lack of information on the actual size of brownfields, their activities, environmental threats related to their exploitation, their transport connections and other factors, causes significant difficulties in taking up planning activities and making sites available for investment purposes.

The process of assessment to reuse post-industrial objects and sites takes many conditions and factors into account, among which the most important are: location, as well as legal, social, environmental and economic conditions (Cheng, 2020). The redevelopment of a post-industrial site requires a plan based on a detailed diagnosis and valorisation of the area, which is then the basis for monitoring of the implemented actions, as well as for building a strategy for the development of the area and its promotion (Kobylańska, Gawor, 2017). It is worth noting that the problem with access to information on post-industrial sites does not only appear in the Silesian Voivodeship or Poland, but also occurs in other European countries, including those with a rich industrial history. In Belgium, for example, there is no reliable quantitative data on brownfield sites. Only in Wallonia has such an inventory been created, covering sites where economic activities had previously been carried out. The registered sites are classified according to their level of contamination, dividing them into contaminated, slightly contaminated or uncontaminated but in need of rehabilitation (Maes et al., 2007). The need for an inventory of brownfield sites is also indicated by studies conducted in other European countries where industry is still relatively active. For example, Balkan countries, such as Serbia, Bosnia and Herzegovina, report the need to create a database of degraded sites at national level, which would take into account geographical location, status and use of the sites (Ignjatić et al., 2017; Vujičić, Tijana, 2017). The need to provide public access to the data on these areas is also emphasised, as it is the first step in solving the problems of revitalisation of brownfield and degraded sites.

3. A concept of e-service dedicated to brownfield sites

Poland has no database on brownfields (including mining sites) and the need to introduce a unified form of the register of brownfields, which is also important to promote those sites to investors, has been called upon for many years. Attempts to collect data on brownfields were made in the first decade of the 21st century in the Małopolskie and Mazowieckie Voivodeships (Zagórska, 2013). The first significant database on brownfields and degraded areas, on a regional scale, was called the Information Platform on Brownfields and Degraded Areas (OPI-TPP) ([orisp.pl/...](http://orisp.pl/)), which was created as part of the Public Regional Spatial Information System of the Silesian Voivodeship. The digital service was created on the basis of the findings of the Regional Programme for Conversion of Brownfields and Degraded Areas (Programme, 2008). The service collected information on several hundred degraded and post-industrial sites and carried out a preliminary assessment in terms of the environmental risks associated with them and in terms of potential directions for their future development (Bondaruk, Zawartka, 2011). The platform was the first and, so far, the only, open regional system which collects data on post-industrial sites. However, despite its pioneering character, the problem with updating

the system and data as well as investments in the development of its functionality remains unresolved. In addition, the first attempts of the OPI-TPP platform to valorise brownfield sites, based mainly on environmental threats, have not evolved as needed, especially towards an assessment in terms of the specific needs reported by investors, while there are yet unused economic, cultural or natural resources available on brownfield sites. Determination of the value of brownfield sites for particular directions of use should therefore be the basis for decisions on how to manage them (Gasidło, 2013).

In 2020, the Marshal's Office of the Silesian Voivodeship in partnership with the Central Mining Institute launched a project entitled "Expansion of the system for management of post-mining areas in the Silesian Voivodeship" (opi-tpp2.pl). An e-service called OPI-TPP 2.0, dedicated to mining areas as a particularly characteristic group of post-industrial sites for the Silesian Voivodeship, is to be its outcome. The new OPI-TPP 2.0 system is in a way the successor of the first database of post-industrial sites in the region, which was called OPI-TPP. However, in contrast to the first database, the new e-service has different conceptual assumptions and functionalities both in terms of the collected data and the presented content. The main advantage of the new e-service will be the development of functionalities related to the provision of information to users, including solutions implemented in the system that enable profiling of assessment of brownfield potential. A simplified structure of the OPI-TPP 2.0 e-service is shown in Figure 1.

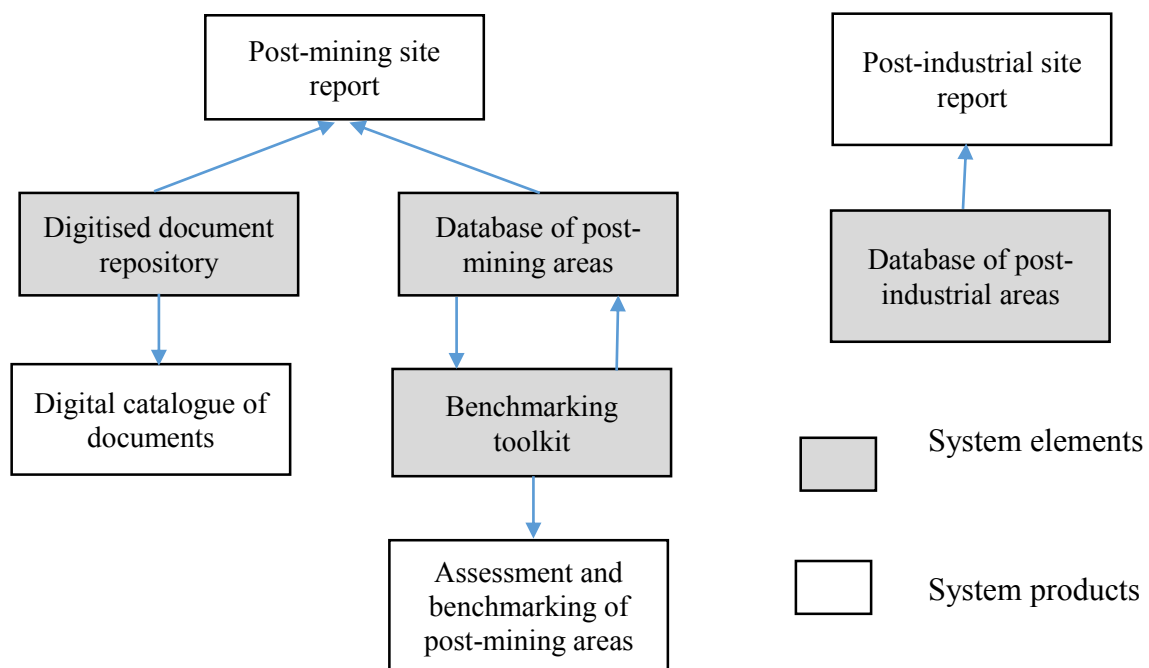


Figure 1. OPI-TPP 2.0 structure

The OPI-TPP 2.0 system will make available a wide range of data on brownfield sites, the most important of which will concern:

- Previous activities.
- Address (town/city, street, number, code).

- Covered area.
- Parcel numbers.
- Zoning in local development plan.
- Ownership structure.
- Land cover structure.
- General condition of the area.
- Internal transport system.
- Possibility of access by truck/cars.
- Distance from an exit from a highway or other national road.
- Access to infrastructure networks.
- Types of activity conducted.
- Cubature objects.
- Vegetation structure.
- Waste in the area.
- Environmental hazards.

The scope of the data was established on the basis of a literature study and expert interviews, and was then verified by stakeholders, especially investors, who will undertake activities to redevelop the sites included in the database.

4. Features of the OPI-TPP 2.0 e-service

E-service is identified and understood as a service that meets the following criteria (Dabrowska et al., 2009):

- it is provided in a partially or fully automated manner and based on information technology,
- it is provided on and via the Internet,
- it is customised with respect to the recipient (personalised),
- the parties to the service are located in different places (a remote service).

The development of e-services is a natural consequence of the progress in ICT technologies and business models in both economic and public spheres. OPI-TPP 2.0, as a modern e-service, is an answer to important challenges of the Silesian Voivodeship in relation to the process of fair transformation in the economic and environmental spheres. The data collected and processed with use of the OPI-TPP 2.0 system will make it possible to analyse and assess the possibility to restore post-mining areas to economic life and to enable revitalisation and investment processes associated with them. The main solutions implemented in the new e-service include:

- The analytical module: the service will provide access to four dedicated analytical tools that will allow for initial valorisation of brownfield sites and for comparison of results obtained from different sites.
 - Analysis of the investment attractiveness of a given area will take into account both indicators directly connected with the area, such as its transport connections level, business environment, access to utilities as well as socio-economic conditions of the county in which the area is located.
 - Analysis of the degree of preparation of the site for redevelopment, including information on the advancement of rehabilitation works after previous activities had been stopped. This analysis should provide the potential user of the site (investor) with an estimate of the time and potential costs that will have to be incurred before a new investment can be properly executed or the site can be made available for new functionalities. Both the time and the planned costs are associated with the activities that are to bring the site back into the socio-economic cycle.
 - Analysis of the potential to provide ecosystem services¹ is a tool to indicate whether the re-use of all or part of an area for economic purposes is justified in terms of cost, locational or social aspects. The results of the analysis will be supplemented with information related to the scarcity of supply of specific ecosystem services in the area.
 - A brownfield benchmarking mechanism is a tool in which the user, by selecting data sets and/or indicators, will be able to make comparisons between sites. This tool is intended to help the user to select and choose the most suitable site for their planned investment.

The original nature, dedicated methodology and provision for choices of weighting factors in the analytical process as required by the user is central to all analytical tools.

- The digital repository will be a collection of digitised documents related to mining areas, which have not been published in the digital form so far. The repository is to serve as a digital archive of documents related to historical mining activities carried out in the areas described in the database. The repository will contain materials collected during the construction of the system such as photographs, orthophotomaps, cartographic studies, numerical terrain models and, in selected cases, 3D visualisations. All information collected in the repository will be catalogued and linked to the database on post-industrial sites. An example of one of the visualisations developed for the purposes of the repository is presented in Figure 2.

¹ Ecosystem services are the states and processes through which natural ecosystems, including the living organisms they contain, sustain and fulfil human life processes. They are responsible for maintenance of biodiversity and production of ecosystem goods, such as seafood, food, timber, biofuels, cellulose, substances of pharmaceutical value or (pre)industrial products. In addition to the production of goods, ecosystem services include functions that sustain life processes, such as waste absorption and processing, regeneration processes, and provide many non-tangible (aesthetic and cultural) benefits to humans (Daily, 1997).

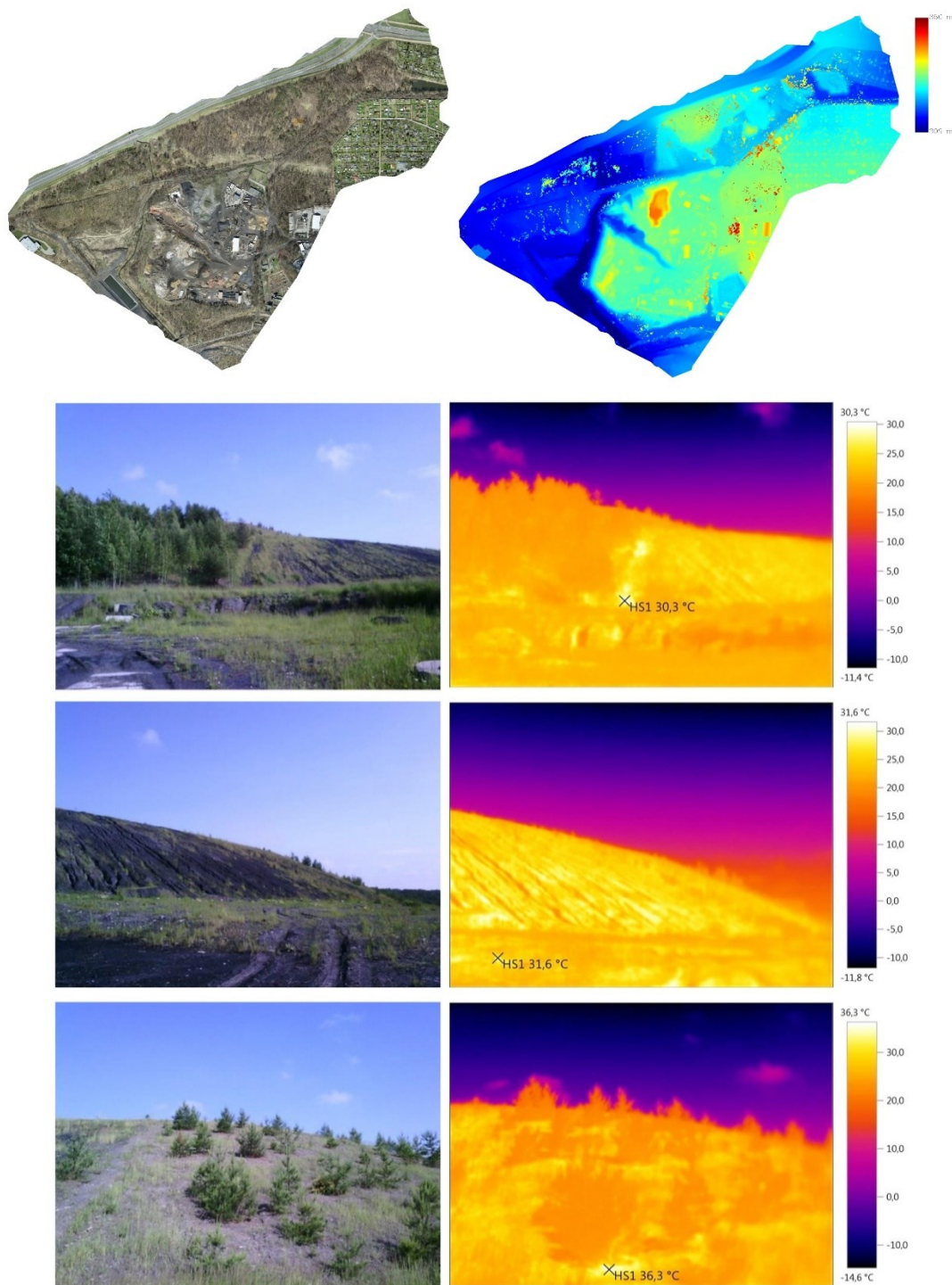


Figure 2. Example visualisations of OPI-TPP 2.0 system

- The method of visualization is an important element of the e-service: on the one hand it should meet the standards expected for this type of service, on the other hand it should be user-friendly. Therefore, the new system will be prepared in the form of a tool based on commercial market solutions which specialise in highlighting the advantages of the presented products and services. Bilingual, responsive design of the system without the need for registration is only one example of what will be implemented in the new e-service.

- The update mechanism is one of the most important elements that distinguishes OPI-TPP 2.0 from the previous solution. The data available in the system will be updated along with the acquisition of information on new areas and statistical data necessary for calculations performed with use of algorithms. In this way, the e-service is to provide current information on mining areas in the region.

5. Summary

Fair transformation in the Silesian Voivodeship brings a number of social, economic and environmental challenges. In the context of the changes brought about by the transformation, the issues related to space and the emerging large number of post-industrial, especially mining areas, are of particular importance. Unregulated legal status, assets located on these sites and, frequently, land contamination are only a few examples of the hindrances against their further economic use. On the other hand, these areas are often perfectly well-connected in terms of transportation and have significant economic potential due to their location. Their infrastructure can often be used for various economic activities. In addition, these areas also carry environmental and social potential and can be a space for the development of ecosystem services, with reparatory and even housing potential. Unfortunately, both the potential and the barriers to the use of these areas are largely unknown, which means that they do not attract significant interest from investors and are a major burden for local authorities and the society. There are no central databases on post-industrial and degraded areas in Poland. At the regional level, inventories of these sites are usually random and incomplete. Nevertheless, the residual existing online databases on brownfield sites make it possible to present sites designated for redevelopment and show the scale of "unused resources" held by municipalities or counties. However, post-industrial sites are a valuable resource of development space for cities, and their inventory and valorisation is the first stage in their management, in accordance with the principles of sustainable development (Huculak 2010). The emerging e-service OPI-TPP 2.0 in the Silesia Voivodeship is an opportunity for the region, which will undergo a strong transformation in the coming years. The information provided by the service will enable more effective use of post-industrial sites and, in the long run, it will allow for mitigation of the social, economic and environmental effects of the transformation.

Acknowledgments

Presented results have been developed as part of the project „Development of a system for management of post-mining areas in the Silesian Voivodeship” (OPI-TTP 2.0) is implemented by the Central Mining Institute in partnership with the Silesian Voivodeship. Funding for the project was granted from the European Regional Development Fund under the Regional Operational Programme of the Silesian Voivodeship for 2014-2020, Measure 2.1 Support for the development of digital public services.

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ISO 37001 SYSTEM AS A TOOL TO MEET ANTI-CORRUPTION REQUIREMENTS IN THE SMALL AND MEDIUM-SIZED ENTERPRISE SECTOR

Natalia JAGODZIŃSKA

BTCH Systemy Zarządzania Gdańsk; natalia.jagodzinska@outlook.com

Purpose: The aim of the publication is to present the specificity of the phenomenon of corruption, its complexity, methods, universality and destructive impact on the implementation of the basic statutory tasks of companies. Indication of a very high risk for management boards and employees of entire companies in the area of corruption. The aim is to present the basics of building an anti-corruption system and to show the possibilities of protection against the destructive effects of corruption.

Design/methodology/approach: Indicating the requirements of the ISO 37001 standard as a tool supporting the introduction of good anti-corruption practices into the corporate culture.

Findings: The ISO 37001 standard is an effective tool to introduce a systemic approach to preventing corruption in an organization.

Research limitations/implications: Currently, there is no access to information on how many small and medium-sized enterprises have taken up the topic of introducing anti-corruption practices in their organizations.

Practical implications: The publication indicates specific solutions that should be taken by small entrepreneurs to prevent corruption in their organization.

Social implications: The publication in its message points out that anti-corruption activities not only concern politics or the sphere of large business, but also it is an important topic that should be paid attention to in small and medium-sized enterprises.

Originality/value: The publication indicates the specific requirements of the ISO 37001 standard and the possibility of its implementation also in the sector of small and medium-sized enterprises.

Keywords: anti-corruption system, ISO 37001 system.

Category of the paper: Technical paper.

1. Introduction

Increasing corruption appears in ever new forms and types. Corruption (Wypych, 2003) is a threat wherever economic and administrative decisions are taken. It should be remembered that corruption does not benefit any economic or administrative/budgetary organization.

Looking from the company's point of view, corruption generates the following measurable losses: overstating costs, poorer quality of goods and/or services, delays in implementation, ineffective achievement of goals. As part of corruption activities, the organization incurs significant indirect losses, such as: loss of credibility, fewer offers received, loss of image and, consequently, loss of a part of the market.

This phenomenon is also starting to appear in the sector of small and medium-sized enterprises. Every employee in a company or office where decisions, concessions, permits, allowances, licenses, and controls are issued, attractive products are produced or services provided, have access to relevant information and thus is exposed to corruption. In Poland, there is an upward trend in the area of corruption, which is also recorded in small and medium-sized enterprises. The worrying increase in corruption is confirmed by data from the CBA report in 2017. On the basis of joint information from the CBA, ABW, ŻW, Police, Border Guard, KAS, it is estimated that in Poland only losses in the public procurement market amount to 11.8% of GDP, i.e. PLN 236 billion. According to the research conducted by the Institute for Democracy and Private Enterprise, in 2017 (CBA, 2019) entrepreneurs in Poland estimated that on average the additional costs in their companies due to corruption amounted to almost 17.5%. According to the Institute for Democracy and Private Enterprise Research (Bąka, and Kulawczyk, 2008), the vast majority of employers indicate as the main effects of corruption-related economic fraud: financial losses, lowering employee morale, legal risk, risk of losing reputation, risk of incurring additional costs, risk of escalation of corruption demands, risk of blackmail and lower security, risk of being cheated, macroeconomic risk, loss of good image, loss of good employees, loss of access to public procurement.

The most disturbing are the increasing number of examples of using corruption to compete on the labor market, the sales market, fundraising, or increasing the influence on the organization of economic processes in its areas of operation. There is competition not only direct, but also indirect, through the substitution of people not directly related to the area of competition, or through the end customer. The above data confirm and make people aware that corruption is a very big problem and a threat, also more and more often for the sector of small and medium-sized enterprises. In recent years, administrative and economic supervision institutions in Poland have recognized that the phenomenon of corruption is one of the fundamental problems and is beginning to dominate the activities of all types of organizations and offices. This position and the adopted international legal acts recognized by the Polish government forced the development of legal systems that are constantly being improved to counteract this phenomenon.

2. Legal regulations

In Polish law, there are many regulations in the field of corruption prevention specified, inter alia, in the penal, civil, fiscal and labor codes. However, most direct regulations can be found directly in the documents:

- Resolution No. 37 of the Council of Ministers of April 1, 2014 on the Government Program for Counteracting Corruption for 2014-2019.
- Government Program for Counteracting Corruption for 2019-2020.
- The Act of October 28, 2002 on the liability of collective entities for acts prohibited under penalty.

Following the requirements of the European Union in the field of regulations on anti-corruption activities, not all regulations have been adapted to Polish law. On March 22, 2018, the European Union sent a reminder to the Polish government, including the following recommendation (Sobczak, 2018):

"Poland must make immediate progress in implementing the key recommendations of the OECD Working Party on Bribery, which have not been implemented more than four years after the June 2013 implementation status assessment". The government has already prepared relevant projects that meet the above recommendations of the European Union. The last stage of their procedure is currently underway. The most important provisions in them include:

- Mandatory implementation of anti-corruption systems in all companies employing more than 50 employees under the threat of high financial and administrative penalties for companies and their management boards. In practice, on the basis of the implemented anti-corruption system, when signing contracts for cooperation, cooperation, etc., all other companies will have to confirm that they have and apply appropriate rules and procedures of such a system, to the extent specified in the scope depending on their size.
- The conditions for applying the criminal record clause are the disclosure of all relevant circumstances of the crime and notification by the Information Provider referred to as the Whistleblower to the body established to prosecute corruption offenses before this authority learned about its commission.

These provisions are also elements of supporting documents such as:

- OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions.
- United Nations Convention against Corruption of October 31, 2003.
- Convention on Combating Corruption of Officials of the European Communities and of Officials of the EU Member States.
- Communication from the Committee to the European Parliament, the Council and the European Economic and Social Committee.

- Council Framework Decision 2003/568/JHA of 22.07.2003 on combating corruption in the private sector.
- Resolution No. 37 of the Council of Ministers of 01/04/2014 on the Government Program for Counteracting Corruption for 2014-2019.

The last element of formal regulations and guidelines for taking actions to prevent corruption is the development of the CBA (CBA, 2015) "Anti-corruption Guidelines for Entrepreneurs" and the developed international standard ISO 37001, which was translated by the Polish Committee for Standardization (<https://sklep.pkn.pl/pn-iso-37001-2017-05>) as a voluntary standard PN-ISO 37001: 2017-05 "Systems management of anti-corruption activities. Requirements and guidelines for use".

All the above-mentioned legal regulations, guidelines of government institutions and normative studies constitute the basis for building an effective anti-corruption system. These guidelines apply not only to public institutions or large corporate organizations, but also more and more often to the SME sector.

3. Requirements of the ISO 37001 standard and their application in small and medium-sized enterprises

The corruption risk management system applies to all companies of any business profile, regardless of the company's size. It is obvious that the exact scope of work and the level of detail of analyzes and solutions depends on the size of the enterprise, the organizational form, the nature of the activities, the nature of the tasks performed, the final product/service and the environment of the given company. It is important that during the implementation of the system, the most important rules that try to eliminate or minimize the occurrence of corruption are followed. Designing and implementing the Anti-Corruption Action Management System (SZDA) begins with defining the following areas: determining the responsibility of top management, risk analysis, establishing an anti-corruption policy and establishing good anti-corruption practices, conducting employee training and determining their competences, communication rules, selecting areas of control and monitoring and evaluation of the effects of operation and improvement of the anti-corruption system. Below are the minimum requirements for small and medium-sized enterprises when implementing the ISO 37001 system according to PN-ISO 37001: 2017-05 "Anti-corruption management systems. Requirements and guidelines for use".

3.1. Top management responsibility

The managing body – top management in the organization – regardless of the organizational form, is obliged to promote anti-corruption activities and to be constantly active in anti-corruption activities. This means a visible and active attitude to promoting honesty, transparency and accountability in the field of anti-corruption activities and exercises rational supervision over the effectiveness of the adopted Anti-Corruption Management System, as well as its improvement. These requirements are specified in the PN-ISO 37001: 2017-05 standard in point 5. Leadership and commitment.

It is important that the management staff of small and medium-sized enterprises promote the values of not giving, not offering and not accepting corruption proposals within their organization and abroad. This principle should be recorded in the documents of the anti-corruption system being implemented. It concerns not only the top management, but also the management of all organizational levels of the company.

To design an anti-corruption system, the company's management should appoint a team of trusted employees who enjoy universal authority and trust of all employees. Such a team may consist of the Management Board Representative for Anti-Corruption Activities, process leaders and, if necessary, a representative of an external consulting company. In the case of small companies in a team, this may be one employee and an external advisor. In the decision to create such a team or appoint a special employee, its framework tasks, responsibilities and the necessary authorizations to conduct design and implementation works are also specified. All employees are obligatorily acquainted with this provision.

3.2. Risk analysis in the area of anti-corruption

The risk analysis carried out in small and medium-sized enterprises must be a task which determines: the type, form, place of business, applicable legal rules for the entire company or the most important selected area. These requirements are specified in the PN-ISO 37001: 2017-05 standard in point 4. Context of the organization and in point 6. Planning. Such risk analysis should include at least such elements as: identification of threats, identification of cells and positions at risk of corruption, prevention of threats at the stage of designing and conducting business activities. At this stage it is very important to define:

- which information about the statutory tasks carried out by companies and in what places of their implementation are the most important for the company and are the most sensitive to negative external factors (internal factors in companies and external factors interfering with the company's environment);
- sources of potential internal and external threats (forms, methods, etc.);
- the degree of risk for a particular occurrence of a real threat and disruption of tasks performed in the company's processes;
- the level of risk for each hazard above an acceptable level;

- external threats to the performance of the company's statutory tasks;
- managing individual risks;
- identification of persons responsible for the management of a given risk;
- determination of monitoring the effectiveness of protection of the anti-corruption system in operation – the internal control system and improvement of the adopted security solutions;
- defining the system and scope of the training organized for individual professional groups or the entire company staff.

The concept of tasks performed as part of the risk assessment means that the process should be analyzed from the beginning, i.e. from making management decisions to initiate preparatory work to achieving the final result (product/service), through preparation for organizational and technological work, implementation of the technological process, to programs, market analysis, marketing and end customer satisfaction results.

All these activities are aimed at minimizing the level of risk for the entire company and all employees, regardless of the size of the organization.

3.3. Anticorruption Policy

In small and medium-sized enterprises, the Anticorruption Policy should take into account the corruption threats identified during the risk analysis. The Anti-Corruption Policy should include: the principles, manner and mode of its application, taking into account business goals, the size of the enterprise, the specificity and place of business. These requirements are specified in the PN-ISO 37001: 2017-05 standard in point 8. Operational activities. It should be remembered that the adopted solutions must be consistent with the provisions of internal and external law.

The main purpose of implementing the Anti-Corruption Policy Principles is to eliminate any corruption that may occur in the company. Corruption in small and medium-sized enterprises may relate to the functioning of a given company and its impact on other organizations (e.g. offices, suppliers).

The implementation of the adopted Anti-Corruption Policy is the responsibility of all employees of this company and all contractors and customers should be familiar with it. The adopted Anti-Corruption Policy should clearly define:

- principles of operation of the Anti-Corruption Management System in the company;
- principles of training all employees of the company;
- equal treatment of participants as a passive or active party;
- explicit prohibition of participation in any corrupt situations;
- obligation of clients and contractors to propose or accept any benefits and corruption proposition from an employee of a given company;
- all information about mutual costs of transactions with the company must be public;

- rules for giving and receiving gifts and other personal benefits, such as participation in sponsored integration or training events;
- transparent regulations for bearing representation and advertising costs;
- the obligation of clients or contractors to immediately notify the company's management about the behavior of its employees that is characterized by corruption;
- rules for reporting corrupt behavior by own employees along with ensuring their safety and anonymity.

The adopted Anticorruption Policy is supplemented by the introduction of the Principles of Good Practices.

3.4. Good Anticorruption Practices

The guidelines for anti-corruption measures in the form of Best Practices are included in the PN-ISO 37001: 2017-05 standard in point 8. Operational activities. In small and medium-sized enterprises, the Best Practices are defined by:

- involvement of all parties to the performance of statutory tasks within the company and external partners in order to promote the adopted Anti-Corruption Policy;
- rules for regular training of all interested parties;
- the principles of developing the Code of Ethics as the basis for trust in mutual business relations;
- principles of the internal control system for the elimination of corrupt behavior in the entire organizational system;
- clear and specific definition of the effects of corrupt behavior and non-compliance with certain principles set out in the Anti-Corruption Policy;
- rules of permanent learning about the latest trends and regulations on combating corruption.

3.5. Internal control

Conducting a systematic internal control of the proper functioning of the Anti-Corruption Management System is a requirement of the PN-ISO 37001: 2017-05 standard in point 8. Operational activities, and at the same time it is a condition for the effective protection of the company and its employees against the occurrence or minimization of corrupt behavior in every place of the company's tasks.

The management of a small or medium-sized enterprise should develop and implement a special procedure (or in smaller companies the rules of conduct) for the preparation, conduct and development of post-audit conclusions.

At the same time, the management should appoint an employee authorized to carry out such inspections along with assigning the scope of tasks, powers and responsibilities.

The management, depending on the type of company, should develop an appropriate procedure/method/rule for reporting suspected corrupt behavior. This procedure must guarantee the anonymity of the person reporting a corruption incident and ensure its safety against the consequences. The procedure should ensure that the whistleblower does not have any sanctions, even if the signal was not confirmed during the check. Of course, the documentation of such a signal and its verification is classified. In the event that the signal about the occurrence of corruption is confirmed, further proceedings must be in accordance with the applicable rules in the company and the law.

3.6. Training and communication

In accordance with the requirement of the PN-ISO 37001: 2017-05 standard in point 7. Resources, the purpose of conducting trainings was specified to ensure that all employees, according to their duties, powers and responsibilities, understood:

- the company's Anti-Corruption Policy;
- the risk of corruption to which this employee and the company are exposed;
- what necessary preventive and reporting actions they should take when corruption is suspected or when a corruption proposal is received.

The form and methods of training are determined by the management of a small or medium-sized company, depending on the size of the type of company and its nature. The manner and form are not imposed, because the most important thing is the goal that the management wants to achieve.

In each company, it is recommended to train employees in groups representing a comparable level of duties, competences and responsibilities in the organization of a given company or a selected managerial staff. It is also recommended to conduct separate training for employees performing tasks in positions with high and low corruption risk. Conducted training is an excellent basis for the creation of appropriate information channels about the actions taken by a given organization to counteract the phenomenon of corruption within the company.

3.7. Personnel policy

One of the most important decision-making areas under a specific anti-corruption system is the employment policy (requirements specified in PN-ISO 37001: 2017-05 in point 7. Resources and point 8. Operational activities). On the basis of the conducted analyzes and the degree of risk of corruption in individual positions, it is recommended that the management of companies establish employment procedures or rules that define:

- due diligence in relation to the employment of staff;
- bonus policy;
- conflict of external interests (family, financial ties, etc.) towards cooperators, customers, competitors;

- conflict of internal interests (family, business ties, etc. between the areas of operation within the company);
- terms of employment of temporary workers or internal orders.

In addition, the HR policy should take into account the following guidelines:

- enabling the company to take disciplinary action against employees who violate or fail to comply with the adopted procedures and/or principles preventing corruption;
- requirements for candidates for positions with a higher corruption risk;
- the obligation to familiarize yourself with the anti-corruption system in force in the company from the very beginning, in particular with the procedures applicable at a given position;
- sanctions to which the employee will be exposed if he does not comply with the applicable procedures;
- ensuring that whistle-blowers are not subject to any retaliation, discrimination or disciplinary action that may result from:
- refusal to participate or omission to participate in activities which the employee has identified as carrying a risk of corruption;
- reporting in good faith or finding a corrupt activity.

3.8. Assessment of the effects of operation and improvement of the anti-corruption system

In accordance with the requirements of the PN-ISO 37001: 2017-05 standard, point 9. Analysis of the results, each enterprise should conduct ongoing monitoring of the anti-corruption system and periodic assessment of the system. The SME assessment of the system should cover suitability, adequacy and effectiveness. The system performance is assessed by a team of employees who developed and implemented it, and monitors its effectiveness on an ongoing basis. Of course, in smaller companies it may be the Management Board Representative for Anti-Corruption Activities, referred to in some documents as the Compliance Officer (the officer supervising compliance with the project/rules). This assessment is carried out on the basis of four activities:

- monitoring;
- measuring the functioning of procedures/rules;
- analyzing the obtained results and analyzing the available documents;
- making a final evaluation of the functioning of the system and formulating conclusions aimed at eliminating the revealed imperfect procedural solutions, as well as improving the system. It is the management of the company that determines:
- what should be monitored and measured (define the scope, methods and form of measurements);

- who of the employees is responsible for monitoring (position in the organizational structure);
- the method of conducting the analysis and evaluation ensuring the correctness of the achieved results;
- deadlines for carrying out measurements and analyzes;
- the form of the final report on the work performed;
- to whom the final report is presented;
- the form of final approval of applications and actions to improve the system;
- the form of archiving documentation from the activities carried out to assess the effectiveness of the system.

Once a year, the company's management should conduct a Management Review – that is, read:

- reports presenting the results of internal control activities,
- the results of periodic assessments (may be quarterly or semi-annual assessments) by the Management Board Representative for Anti-Corruption Activities
- a list of reported signals from employees regarding corruption activities. The result of such a Management Review is a decision on the ways and forms of improving the anti-corruption system in force.

4. Summary

The Anti-Corruption Policy and Best Practices adopted by a small or medium-sized enterprise are an excellent basis for joint action with business partners. Clearly defined principles of preventing corruption give a sense of business security to employees, entrepreneurs and business entities cooperating with them.

Full documentation of the Anti-Corruption Management System should include a management declaration explaining the reason for the development and implementation of the Anti-Corruption Management System, the scope of implementation of the system in a given organization, anti-corruption policy, procedures for the implementation of good practices, training and communication procedures, internal control system and a system for assessing the effects of action and improvement system.

More and more small and medium-sized enterprises in Poland are voluntarily introducing anti-corruption systems, but this will change over time. The draft anti-corruption resolution, which is at the last stage of the proceedings in the Sejm, provides for the obligation to implement such an anti-corruption system for all organizations employing over 50 people.

The draft also includes a provision that in the case of cooperation with other smaller business partners, when concluding cooperation agreements, it must be stated that these partners have implemented anti-corruption solutions appropriate for the established cooperation and undertake to jointly act against corruption.

To sum up, introducing an anti-corruption system according to the standard according to the international standard PN-ISO 37001: 2017-05 "Anti-corruption management systems. Requirements and application guidelines" will be a simple tool to help meet legal requirements in the field of corruption prevention. In addition, the introduction of anti-corruption rules will allow entrepreneurs to build the image of a transparent and professionally managed organization. Thanks to this system, smaller organizations will more efficiently conduct risk analyzes, which will allow to find places in the organization where threats may occur. Such a system gives employees a sense of security through clearly and clearly defined decision-making processes. Protection against unconscious corruption and their consequences is built.

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INVOLVEMENT OF PUBLIC AUTHORITY IN THE DEVELOPMENT OF ENTREPRENEURSHIP AND NURTURING A BUSINESS-FRIENDLY ENVIRONMENT

Jan JAŚKOWIAK

Wrocław University of Economics, Faculty of Economics and Business, the Ecological Economics Department;
jan.jaskowiak@ue.wroc.pl, ORCID 0000-0003-0175-1925

Purpose: The development of entrepreneurship is associated with both the activity of entrepreneurs and with the involvement of public authorities. Through its decisions the public administration can influence the building of a business-friendly environment. The aim of this research paper is to present the competences of public authorities in the field of entrepreneurship development and the business environment, as well as to indicate the most important factors related to running a business from the perspective of entrepreneurs.

Design/methodology/approach: The main method used in the writing of this article is the analysis of source materials. It covers the achievements of public authorities in the field of entrepreneurship development in Poland since 1989. The criteria related to the appropriate conditions for running a business are also considered.

Findings: The research examines reports and rankings run by editorial staff of prestigious business magazines and international organizations in terms of criteria as well as actions of countries for the development of entrepreneurship. The tools and methods of public administration that influence the economy through the development of entrepreneurship were also analysed.

Originality/value: The article demonstrates the instruments of public authority in Poland, both at the national and regional level, in terms of their potential to nurture a business-friendly environment. The paper can be valuable both for managers and investors, as well as for managers at various levels of public administration.

Keywords: Business, economy, development, management.

Category of the paper: Research paper.

1. Introduction

The scale and pace of entrepreneurship development in the world and in individual countries is closely related to many processes taking place in the world. The characteristic features of individual countries and regions, such as appropriate road or rail infrastructure,

an appropriate number of resources, market absorption or workforce is also an important determinant. The pace of private sector development is also related to increasing globalization, internationalization of processes and digitization. Every year, entrepreneurship develops further. By comparison, the gross domestic product measured according to the purchasing power parity in the world in 1990 was 27,478 billion international dollars, in 2000 it was 50,209 billion and in 2020 – 134,557 billion (World Economic Outlook Database, 2021). Therefore, it is a clear indication of the scale and pace of development of the world economy.

The authorities of individual countries contribute significantly to this process, at both the national and regional level, as, through their decisions, they may positively or negatively influence the conducting of economic activity in those individual countries. One of the state's competences is nurturing a friendly environment capable of promoting entrepreneurship. A responsible economic policy may stimulate the development of individual business sectors, and their measurability may vary. These activities may be directed primarily inward, i.e., encouraging citizens to start running a business. Another form of stimulation may be the creation of favourable conditions aimed at encouraging the investor to locate a branch of their company in a given country or region (Dziemianowicz, 2008).

The involvement of public authorities can be justified both economically and socially. This is mainly due to higher inflows of capital to the state or municipal budget. It also influences the provision of jobs on the market, which in turn may lead to greater satisfaction and improved standard of living of residents, e.g. through the development of infrastructure, public services, and education. Creating nine out of ten jobs in the global economy, the significance of the private sector is significant (Kanchana et al., 2013).

Over the last three decades Poland has undergone dramatic changes. Transforming the post-WWII economy modelled previously on the Soviet Union into a capitalist economy posed a great challenge. In this regard many activities were undertaken at that time.

This article attempts to demonstrate the contribution of public authorities to nurturing entrepreneurship in individual countries with Poland as an example, as well as to present the factors that are most important from the perspective of entrepreneurs and investors seeking to run an efficient and effective business in the country (Górski, 2015).

The activities of the Polish government over the last three decades, in terms of legislative changes related to operating a business in Poland, will also be discussed. The lists and criteria of individual international rankings related to entrepreneurship in individual countries will be presented. These examples will make it possible to validate or refute the claim that over the last decades Poland has made many changes in the field of economic regulations, contributing to the development of entrepreneurship and nurturing a business-friendly environment in Poland. According to a second research hypothesis, economic development is very closely related to many processes taking place in the world and economies of other countries alike. Consequently, the competences of public authority are an important factor related to the pace and scale of development, but there are also many other interrelationships that affect the private sector and entrepreneurship in the world.

2. Competences of public authority in the field of entrepreneurship development

The instruments of governments capable of stimulating the development of entrepreneurship are, above all, legal regulations, both in the field of running a business, but also in the field of the tax system or obligations towards public administration bodies that supervise business activity. Another option for the government is to create dedicated programs for entrepreneurs (OECD, 2007). These can be, for example, special tax reliefs or discounts related to the development of the site where the facility is located. A great facilitation in running a business is also the reduction of bureaucracy, i.e. limiting all possible responsibilities of entrepreneurs arising out of administrative and legal regulations. This is to shorten the time dedicated to this area, which does not translate into the company's development or additional benefits. An example of a document that reduces bureaucracy is the *Paper Burden Reduction Initiative* launched by the Canadian government (Initiative Report, 2007). Another document that contributed to the reduction of the excessive bureaucracy by nearly 20% is *The Standard Cost Model*. This scheme has been successfully introduced by the governments of Norway and Denmark (SCM Network, 2004).

Activities related to the nurturing of an entrepreneurship-friendly environment can take place at the central level, an example of which may be the initiatives mentioned above. Local (regional) authorities also play an important role in this process, as they can significantly contribute to the effective encouragement of investors to develop business in a particular region.

The choice of location is determined by a number of factors that are carefully analysed by investors. The most important of them is the investor's motivation combined with the company's financial condition. This translates into companies searching for outlets or producing more goods. Another important element is the fiscal policy of a given country and its economic situation. A stable economy is critical from the perspective of this process. The legal regulations related to running a business are another factor (Dunning, 2004). Other factors that may affect the choice of location may be the availability of resources necessary for production, the demand for products, the situation on the labour market, costs of employment, the country's prospect for economic development (Lizińska, 2012).

The division of determinants related to the choice of investors' locations may also be expressed in terms of the appropriate road or rail infrastructure. Another factor is the degree of bureaucracy, which is important from the perspective of the company's operational efficiency (Wiśniewski, 2013).

A very important and helpful aspect of nurturing a business-friendly environment by the authorities is the dialogue with entrepreneurs. They are the group most affected by any changes in this area. Ensuring the stability of legal or tax regulations seems to be the most important postulate expressed by this group. Allocating a significant amount of time on performing bureaucratic obligations towards the state is another key area faced by entrepreneurs. High taxes and costs incurred by the employer towards employees is another important factor. Moreover, limited cooperation with public administration bodies, lengthy court proceedings and arbitrary decisions of officials constitute an obstacle for entrepreneurs (Association of Entrepreneurs and Employers, 2018). Therefore, those are important factors influencing the running of a business remaining within the competence of public administration.

It should be noted that in addition to the important factors that are on the entrepreneur's side, much depends on public authorities both at the national and regional level.

Figure 1 presents the key aspects related to the choice of a location from the investor's perspective in relation to public administration bodies. The figure also clearly shows those competences that are more or less influenced by local government authorities.

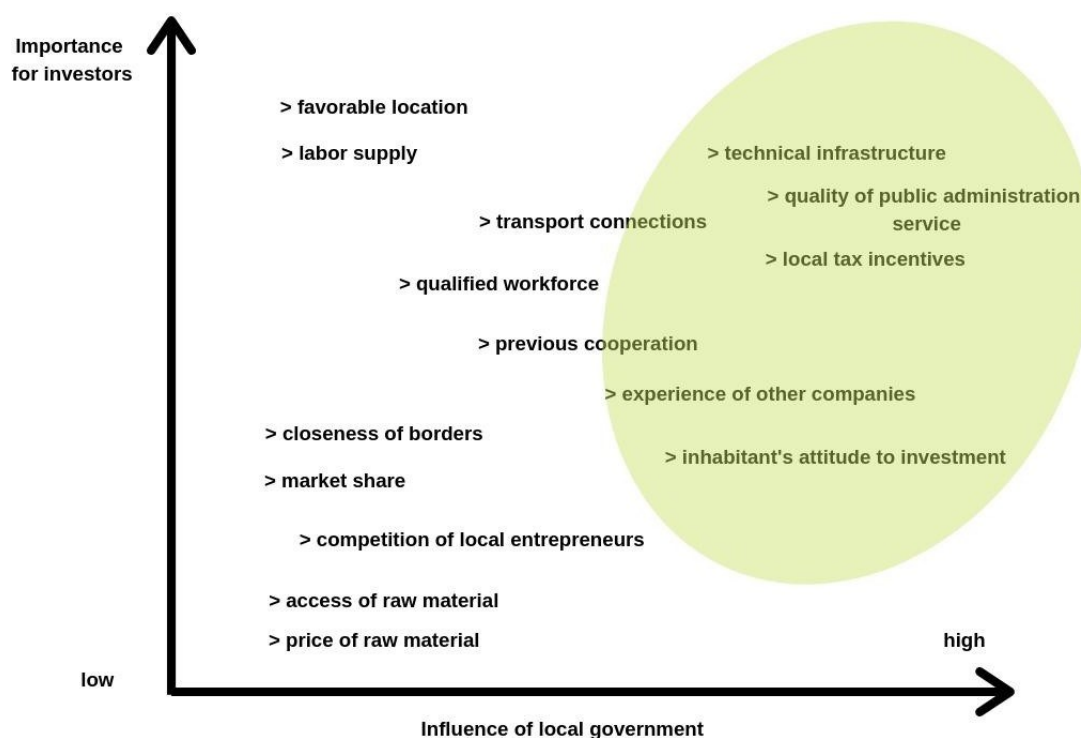


Figure 1. Factors that are most important for entrepreneurs considering the location of an investment, together with the capabilities of the local government in this regard. Adapted from: Dziemianowicz, 1998.

Figure 1 shows that from the investor's perspective the most important issue is the appropriate infrastructure remaining within the competence of the local government. The local government has a direct impact on the modernization of specific roads or railroads, it can also apply for co-financing of these investments from various government and international programs. Another important element is ensuring the appropriate quality of public

administration services in a given region. The efficiency and effectiveness of civil servants may significantly affect the satisfaction with the cooperation of the private sector with public administration. A business-friendly environment can also be nurtured through the preferential treatment of entrepreneurs associated with various incentives or reliefs. In addition, the local government can stimulate the development of entrepreneurship and encourage new investments by creating special programs, as well as by encouraging qualified staff to settle in a given region. The local government may also influence the development of education in the region, which may indirectly influence the choice of the investor.

3. Activities of the Polish government in the field of entrepreneurship development

The Polish economy has been undergone some thorough reforms. This is evidenced by the number of amendments to the laws relating to entrepreneurs. The first significant change in this regard was the so-called *Wilczek Act* of 1988. Its aim was to stimulate economic activity. It was a completely new solution in terms of economic freedom in Poland (the Economic Activity Act of 23rd December 1988). As a result of these changes, over two million new companies were established, creating over 6 million jobs. This act proved to be a great success and allowed for the release of the entrepreneurial potential (Grabarczyk, 2019).

Another important change in legislation was the law on economic activity enacted in 1999. The reason for that change was regulating the legal basis for the private sector in Poland. This document was also related to the Constitution enacted in 1997 (the Business Activity Law Act of 19th November 1999).

The next important moment for the development of entrepreneurship and the creation of a business-friendly environment was the Freedom of Economic Activity Act of 2004. This act defined the rules for economic activity in Poland, also in terms of the commencement or termination of activity (the Freedom of Economic Activity Act of 2nd July 2004). Over the years, the document has been amended as many as 77 times. Each of the changes was aimed at improving the conditions for entrepreneurs, but the number of modifications may indicate the dynamics of economic change and the development of the Polish economy at that time (Szafranski, 2018).

Another legal act that modified the principles of the functioning of the economy and entrepreneurs in Poland was the Act of 2018, known as *the Law of Entrepreneurs*. Its aim was to increase the transparency of the functioning of enterprises, as well as to develop the private sector. Facilitations included concessions for starting a business or exemption from the obligation to pay taxes for a certain period of time (the Law of Entrepreneurs Act of 6th March 2018).

The 2018 Act on Supporting New Investments is another important law in the field of private sector development. The assumption of this act is the expansion of special economic zones throughout the country. Before the Act, such opportunities were possible only in specially designated economic zones providing special conditions, i.e. incentives that encouraged investors to invest and expand the factory in a given area (the Act on Supporting New Investments of 10th May 2018).

Currently, the government is planning to introduce changes in the area of entrepreneurship under the The Polish Deal scheme.

4. Factors influencing the development of entrepreneurship – ranking criteria

The involvement of individual countries in the development of entrepreneurship and the nurturing of a business-friendly environment can be measured and interpreted in different ways. Many reports are written worldwide on this subject. In this way, for example, the involvement of states in attracting new investors, the development of entrepreneurship, the value of imported and exported products from a given country, tax-related revenues to the public sector budget, and the level of entrepreneurs' satisfaction may be examined.

Selected examples of annual reports assessing the activity of countries in nurturing the business environment and assessing the current conditions for entrepreneurs are presented below. Such an analysis makes it possible to identify the most important factors contributing to the state being business-friendly from the perspective of both evaluators and entrepreneurs.

The *Global Business Complexity Index* is an annual report that evaluates the environment for business activity in individual countries around the world. Poland ranks 10th in the world in terms of difficulties in running a business, and also second in Europe, behind France. According to the authors of the report, the factors that contribute to such a result are, first of all, frequently amended laws, significantly impeding entrepreneurial activity. Another important indicator is digitalization. Despite introduced innovations, Poland differs significantly from other countries in this field. (TMF Group, 2021). Denmark, Hong Kong and the Cayman Islands are among the countries with the least degree of legal obstacles for entrepreneurs. Among the factors that contributed to this result in the case of Denmark was the simplicity of starting a business, which is also influenced by the high level of digitalization. Another advantage is the ability to correspond and complete documents in English, which is potentially attractive for entrepreneurs from other countries (TMF Group, 2021).

Therefore, it should be recognized that facilitating business and, as a result, the development of entrepreneurship is associated with limiting regulations, the learning of which costs entrepreneurs time and money as frequently they rely on lawyers and accountants in legal and financial aspects, for example related to the tax system. Among the most frequently cited examples of difficulties faced by Polish entrepreneurs are: cooperation with the public sector, numerous and frequent inspections, distrust towards entrepreneurs, frequent amendments of the law, a complex tax system and high taxes (Związek Przedsiębiorców i Pracodawców, 2018).

Another important report that examines the criteria of business-friendliness is the *Doing Business Report* published by the World Bank. Among the factors influencing the final result are, for example: the time and criteria of starting a business, the judiciary in the context of the duration of court proceedings, anti-corruption regulations, the tax system, construction law, labour law. In 2020, the authors of the report ranked Poland 40th out of 190 evaluated countries (World Bank Group, 2020). A factor distinguished in the assessment of Poland was, among others, the change related to obtaining electricity by introducing more efficient systems for customers. The authors criticized the difficulty in transferring a property ownership caused by a lengthy procedure of recording the transfer of ownership in the land and mortgage register (Sobczak, 2020).

The next presented ranking is the *Index of Economic Freedom*, which also examines the conditions for running a business in individual countries. Criteria that are taken into account in this comparison include (The Heritage Foundation, 2020):

- legal regulations: transparency and the transparency of legal acts regulating economic activity, the efficiency of the judiciary system, or the stability and agency of the government,
- fees and taxes: this group includes costs related to running a business, therefore all employee contributions or taxes,
- market: ability to increase the volume of transactions, competition (The Heritage Foundation, 2019).

In this ranking, in 2021 Poland took 41st place in the world, and 25th in Europe. Taking all the criteria into consideration, Poland was awarded 69.7 points. By comparison, in the same ranking in 1995 Poland received 5.7 points.

The inflow of capital to countries, as well as their foreign expansion may be another measure of the degree of entrepreneurship development. The organization that reviews the individual results within the United Nations is the United Nations Conference on Trade and Development (UNCTAD), based in Geneva. Table 1 presents a summary of the inflow of foreign capital to individual European countries, as well as the capital outflow from a given country.

Table 1.
Foreign Direct Investment inward and outward Stock in Europe

| FDI inward Stock (millions of dollars) | | | FDI outward Stock (millions of dollars) | | | |
|--|---------------|----------------|---|------------|---------------|---------------|
| Region/economy | 2000 | 2010 | 2017 | 2000 | 2010 | 2017 |
| European Union | 2 322 122 | 7 357 407 | 9 123 982 | 2 907 116 | 9 136 663 | 10 631 707 |
| Austria | 31 165 | 160 615 | 185 938 | 24 821 | 181 638 | 241 158 |
| Belgium | 195219 | 873 315 | 566 913 | 179 773 | 950 885 | 690 820 |
| Bulgaria | 2 704 | 44 970 | 47 838 | 67 | 2 583 | 2 817 |
| Croatia | 2 664 | 31 517 | 33 436 | 760 | 4 443 | 6 053 |
| Cyprus | 2 846 | 198 097 | 225 779 | 557 | 197 454 | 216 219 |
| Czech Republic | 21 644 | 128 504 | 153 468 | 738 | 14 923 | 23 655 |
| Denmark | 73 574 | 96 136 | 107 836 | 73 100 | 163 133 | 205 650 |
| Estonia | 2 645 | 15 551 | 23 148 | 259 | 5 545 | 7 700 |
| Finland | 24 273 | 86 698 | 85 980 | 52 109 | 137 663 | 136 392 |
| France | 184 215 | 630 710 | 874 521 | 365 871 | 1 172 994 | 1 451 663 |
| Germany | 470 938 | 955 881 | 931 285 | 483 946 | 1 364 565 | 1 607 380 |
| Greece | 14 113 | 35 026 | 32 371 | 6 094 | 42 623 | 22 563 |
| Hungary | 22 870 | 90 845 | 93 332 | 1 280 | 22 314 | 28 611 |
| Ireland | 127 089 | 285 575 | 880 157 | 27 925 | 340 114 | 899 479 |
| Italy | 122 533 | 328 058 | 413 246 | 169 957 | 491 208 | 532 910 |
| Latvia | 1 691 | 10 935 | 17 234 | 19 | 895 | 1 792 |
| Lithuania | 2 334 | 13 403 | 17 576 | 29 | 2 107 | 3 413 |
| Luxembourg | 195219 | 172 257 | 178 048 | 179773 | 187 027 | 241 421 |
| Malta | 2 263 | 129 770 | 203 571 | 193 | 60 596 | 74 024 |
| Netherlands | 243 733 | 588 077 | 974 706 | 305 461 | 968 105 | 1 604 884 |
| Poland | 33 477 | 187 602 | 234 441 | 268 | 16 407 | 30 982 |
| Portugal | 34 224 | 114 994 | 143 637 | 19 417 | 62 286 | 60 976 |
| Romania | 6 953 | 68 699 | 88 199 | 136 | 1 511 | 883 |
| Slovakia | 6 970 | 50 328 | 52 032 | 555 | 3 457 | 3 406 |
| Slovenia | 2 389 | 10 667 | 16 033 | 772 | 8 147 | 6 913 |
| Spain | 156 348 | 628 341 | 644 415 | 129 194 | 653 236 | 597 250 |
| Sweden | 93 791 | 352 646 | 334 974 | 123 618 | 394 547 | 401 013 |
| United Kingdom | 439 458 | 1 068 187 | 1 563 867 | 940 197 | 1 686 260 | 1 531 683 |

Note: World Investment Raport 2018, UNCTAD, Geneva 2018, p. 205.

The indicators presented in Table 1 may be interpreted as material evidence of the development of the economic sector in Poland in terms of the influx of foreign investors to Poland, but also of those investors who started their business in Poland and develop their entrepreneurship in other countries. These results also confirm the importance of the development of economies as far as the rapid increase of the presented figures in just 20 years is concerned. Between 2000 and 2017, the country recorded a 7-fold increase in terms of the volume of the inflow of foreign capital.

The chart in Figure 2 below is an example of another important measurement of the development of Polish entrepreneurship expressed in billions of US dollars' worth of imported and exported products.



Figure 2. Chart representing Polish imports and exports between 1996 and 2019. Adapted from: ‘Polski eksport w liczbach: 7 wykresów, które pokazują, jak zmienił się handel zagraniczny Polski od lat 90’ [‘Polish exports in numbers: 7 charts showing how Poland’s foreign trade has changed since the 1990s.’] by Rosa J., available online <https://300gospodarka.pl/analizy/polski-eksport-pie>, access: 11.08.2021.

The chart presented in Figure 2 clearly shows the upward trend over the last three decades. The above-mentioned statements on the funds invested by investors, as well as the value of imported and exported products, show the scale of entrepreneurship development in Poland. They also confirm the importance of the activity of public authorities in the context of the development of entrepreneurship in Poland.

5. Conclusions

This article presents the most important factors from the perspective of entrepreneurs and investors that influence the development of entrepreneurship. The main legislative changes aimed at the development of the economy in Poland and the business environment were quoted. The competences of public authorities related to the policies aimed at the development of the private sector and entrepreneurship in Poland were also indicated. The determinants that are assessed in individual rankings were also analysed. They are used to measure entrepreneurship and business conditions in individual countries, including Poland (Kozień, 2018).

To sum up, it should be acknowledged that the Polish government, since 1989, in the field of legislation related to the nurturing of a business-friendly environment and for the development of entrepreneurship, undertook many activities in the field of adopting new legal acts. Moreover, these actions have yielded the intended effects. This is evidenced by both the pace and scale of development of economic indicators in Poland, as well as the influx of many new investors. Among other determinants that contributed to the achieved results, it is necessary to emphasize the potential of the Polish state in terms of factors important from the perspective of investors, as presented in this article.

The confirmation of the second research hypothesis stating that economic development is very closely related to many processes taking place in the world, as well as to the economies of other countries, is the fact that in the face of the global crisis in 2008 there was a temporary collapse in the steady growth of the value of products imported to, and exported from, Poland, even though the crisis did not affect the country directly. Thus, the competences of public authority are an important factor related to the pace and scale of development, but there are also many other interrelationships that affect the private sector and entrepreneurship in the world.

The organization of a business-friendly environment is a process that requires regular review and adaptation of regulations to everyday life. All this should be considered when creating the best possible conditions for entrepreneurs. The Covid-19 pandemic revealed the sphere of new activities in this area, including remote work or progressive digitalization. This is a challenge that all countries will have to face in the coming years. Observing the growth tendency of economies in the world, as well as the development of consumerism, it is believed that this development will be even more rapid in the next decade.

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QUALITY OF SERVICES PROVIDED BY SILESIAN HEALTHCARE INSTITUTIONS DURING THE COVID-19 PANDEMIC – RESULTS OF THE SURVEY

Julia JURASIK¹, Paulina KRĘT², Bartosz ORZEL^{3*}

¹ Silesian University of Technology, Student Research Club of Quality Management; julijur154@student.polsl.pl, ORCID: 0000-0003-4833-5240

² Silesian University of Technology, Student Research Club of Quality Management; paulkre161@student.polsl.pl, ORCID: 0000-0002-6312-601X

³ Silesian University of Technology, Faculty of Organization and Management, Department of Economics and Informatics; Bartosz.Orzel@polsl.pl, ORCID: 0000-0003-1506-4798

* Correspondence author

Purpose: The purpose of this article is to determine the level of medical services quality provided by medical clinics during the COVID-19 pandemic.

Design/methodology/approach: The research was based on analyzing the results of a survey conducted among patients of Silesian clinics. First, a survey sheet was designed using the SERVQUAL model. The next step was to conduct a study in clinics in Silesia. As part of the study, 50 patients' survey votes were received and analyzed.

Findings: Respondents rate the state of health care in Poland as good, telehealth should be reserved for those in quarantine, and should be conducted only when prescriptions are being written, not when diagnosing a patient, respondents pointed out that medical facilities provided meeting conditions that did not expose patients to COVID-19 infection, hence it seems unjustified to use tele advice for patients not under compulsory quarantine.

Research limitations/implications: The main research limitation is the number of feedback surveys received. If there were more votes, the research sample could be even more credible.

Practical implications: The study was conducted in times of a real epidemiological threat. The results of the study show how, in a group of 50 patients, the key aspects related to the provision of medical care in Silesian healthcare institutions are perceived.

Social implications: Patients' observations regarding the functioning of the health care system in times of a pandemic and the key aspects related to ensuring access to this care are extremely valuable tips that may improve the standard of medical care in Poland also during possible future pandemic waves.

Originality/value: Carrying out a literature analysis indicated that there were no studies conducted among patients so far. Thus, the research gap was defined. The authors decided to conduct the study directly among patients by sending the sheets to medical clinics.

Keywords: COVID-19, Quality of medical services, Pandemic, Medical Services, Quality.

Category of the paper: Research paper.

1. Introduction and literature review

The approach to the quality of medical services provided by health care clinics has changed significantly during the pandemic. Both the method of providing medical services and access to a general practitioner have been significantly limited. The most affected group of patients seems to be those who are constantly under medical care, require longer treatment, and are chronically ill. Due to the epidemiological threat, the approach to issues related to the availability of general practitioners and specialist clinics has also changed. The publication proposed and implemented a solution based on the use of the SERVQUAL model to test the expectations and the degree of patient satisfaction with the medical services received during the pandemic. Based on the analyzed literature, a research gap in this area was found. 10 publications, both Polish and international, on the subject of researching the quality of providing medical services during the COVID-19 pandemic were taken into account (Piasecki, 2020; Kryvachuk, 2020; Sadoch, 2021; Pylińska-Dąbrowska, 2021; Szymańska, 2020; Kopeć, 2021; Drozd, Bułaś, 2021; Obrębski et al., 2021; Robakowski, Synowiec, 2021; Krzystanek et al., 2020). The literature review allowed not only to identify the research gap but also helped to establish the research method consisting in conducting a survey-based fully on the concept of the SERVQUAL model.

Analyzing the topic of the quality of services in times of a pandemic, most publications concern the quality of education, the impact of the pandemic on the quality of work, and employee satisfaction with its performance in various industries. Analyzed publications (Theoret, Ming, 2020; Al-Samarrai et al., 2020; Sarkar, 2020; Onyema et al., 2020). The results of the analyzed publications indicate the negative impact of the coronavirus on the quality of education. According to the results of the research, the very process of education may be disturbed, however, equally serious effects may affect the students and teachers participating in the process. The publications highlighted the malaise of students participating in the remote education process. Often the very process of isolated learning may be detrimental to young people whose natural need is contact with the environment and surroundings (Onyema et al., 2020). Other studies indicate remote learning difficulties hitting underdeveloped or early economic development countries (Al-Samarrai et al., 2020). This state of affairs can easily be related to the functioning of other sectors and the differences between highly developed and less developed countries. Research on the coping of health services during a pandemic in underdeveloped countries shows that the quality of medical services is declining. It is more felt for patients than in highly developed countries (Paital, Parida, 2020; Khan et al., 2020; Jiang et al., 2021).

When looking at the quality of ensuring the quality of medical services provided by medical facilities in Poland in the times of the covid-19 pandemic, it is also worth looking at the issue of securing and job satisfaction among healthcare workers. The conducted research indicates

a fairly good level of satisfaction with the work with the use of personal protection measures by Polish doctors. It is also worth mentioning that doctors are provided with adequate amounts of personal protective equipment in times of a pandemic. Unfortunately, the situation in Poland is worse in the area of informing about the possibility of infectious or viral diseases or cases of its occurrence among health care workers. Individual zones in hospitals are also not properly designated. There are also deficiencies in training and informing employees about the epidemic situation in health care facilities, which are places of particular risk of infectious and viral diseases (Orzeł, Wolniak, 2021; Orzeł, Horodecka, 2021). On the other hand, to improve the flow of information and facilitate the proper redistribution of personal protective equipment in certain countries (e.g. Denmark), the obligation to prepare reports on the availability of masks, disinfectants, and gloves on the market has been introduced (Furman et al., 2020). From the patient's point of view, satisfaction with services may depend on the clarity of information found on the clinic's website. Especially in the noise of information coming about the pandemic situation. In the era of widespread isolation, electronic services and medical services, in which patients search for phrases about health care, disease symptoms, and safety, are gaining in importance. In the era of a pandemic, the inflow of information, up-to-date information, and its clarity are important, not only directly provided services (Król et al., 2021). However, the latter should not be underestimated either. Research shows that the emotional value – appreciation, care for the patient, empathic disposition – affects his satisfaction, and then loyalty to a given medical facility (Akob et al., 2021). According to the research, in the eyes of doctors, computerization – e-prescriptions, electronic medical documentation is a positive change in the healthcare system. This shows that in addition to medical personnel, technical and IT personnel is important elements of the hospital ecosystem (Haberla, 2021; Król et al., 2021). On the other hand, technologically excluded people deepen their confusion in the age of computerization and prefer a personal consultation with a doctor (Każmierczak, 2020). However, computerization may, in the long run, reduce the exclusion of rural inhabitants in Poland (Wójcik, 2020). Data from March 2020 indicated that many people were underestimating the uniqueness of the pandemic (Poczucie, 2020). It turned out, however, that the pandemic revealed a multitude of differences in the level of efficiency of health care systems in European countries, despite the use of similar strategies of coping with it – limiting the activities of many areas of public life. The shortage of personal protective equipment and the lack of equipment in hospitals became a common problem, with which, for example, Belgium tried to cope by limiting access to them only to medical facilities.

In Poland, the public procurement procedure has been simplified to speed up and streamline the process of acquiring PPE. However, prices for protective measures were not lowered, as was the case, for example, in Bulgaria or France. These actions led to a series of abuses, which were presented by the Polish Ministry of Health (Furman et al., 2020). Human resources are a key component of the tools to fight the COVID-19 virus. Information collected from European countries showed that the unexpected situation forced them to undertake many

non-standard actions. In some countries, the beginning of the pandemic was marked by a drastic decrease in the availability of medical services, which at its peak even led to the selection of patients depending on their age and health status, and on its basis, the decision to assist was made. It is caused by low expenditures on the health service in Poland, shortage of medical equipment (including respirators), insufficient hospitals (Haberla, 2021), and shortages of human resources in the health service, which are one of the largest in Europe – the number of doctors and nurses per 1000 people is 2.3 and 5.2, respectively (Libura et al., 2018; Wójcik, 2020). Most European countries, including Poland, have agreed to involve medical students in the fight against the pandemic, as well as additional medical professionals (Furman et al., 2020). However, one of the authors noted the unlawfulness of the decision on the refusal to provide medical services by doctors, in the face of the unconfirmed risk of the patient becoming infected with the COVID-19 virus, referring to the ideals of medical ethics, according to which the patient's interest should take precedence over the interest of the doctor (Piasecki, 2020). These shortages and chaotic decisions led to the extension of the usually long queues to specialist doctors, breaks in diagnostics, and disturbances in the way of communication, primary care physician – specialist physician (Haberla, 2021). The SERVQUAL method has already been used to examine patients' expectations and opinions on the quality of care they receive in Polish medical facilities.

The conducted research and the obtained results show that using the SERVQUAL method it is possible to locate the features of the service that are perceived by patients as not fully meeting their expectations and those that are at a satisfactory level. (Lewandowski, 2008). Since SERVQUAL is a tool that allows examining the subjective feelings of the patient, the authors of this study decided to use them in the framework of the research, the results of which are presented later in the article.

2. The survey sheet – design and methods

There are many methods of measuring service compliance presented in the literature. The SERVQUAL (Service Quality) method allows you to monitor the level of customer satisfaction with the service received against the previously set expectations. Others are, for example, the SERVPERF method, which in turn assumes that the service provided has the only impact on quality. The subjective opinion of the respondent is not taken into account, which in the case of medical services that rarely provide unambiguous results (talking about a "healthy" or "sick" patient at the exit) seems unjustified. Patient satisfaction in this case concerns the immeasurable value of life, therefore it is impossible to depict it in the form of framework features of the service. On the other hand, the Critical Incidents Method (CIT) or the analysis of complaints are open methods (open interview), with regard to which it is more

difficult to compile customer reviews in a numerical scale and provides only descriptions of extreme sensations. The methods of assessing the quality of services presented above constitute only a part of the methods developed in this area. Each of them has undoubted advantages, but also disadvantages. The SERVQUAL method is based on the concept of customer learning – people get to know what they like and what they do not like for the service provided. The SERVQUAL method works effectively when used in combination with socialization and self-determination theory. Although this method was originally used to test the quality of services in the banking sector, the very fact of comparing the expectations with the current state makes it a useful tool in the context of the problem under consideration. The 5-point satisfaction scale that was used allows for a fairly accurate statement of the patient's satisfaction level and its average level.

The questionnaire was constructed based on the SERVQUAL method. The form of questions related to patient satisfaction, their expectations, and observations in relation to medical clinics as well as hospitals was used. The respondents to the survey were patients of family clinics from the area of Upper Silesia, the selection was random.

The first part of the survey included general questions about whether or not to be a GP patient during the COVID-19 pandemic, the possible number of appointments, and general opinion on the functioning of the healthcare system during the pandemic. In the case of the last question, a five-point scale was used, where "1" means "very bad" and "5" means "very good" (Table 1).

Table 1.

Introductory questions regarding exposure to medical facilities during a pandemic and general opinion on medical services provided during a pandemic

| Please put X in the appropriate box or select the appropriate answer | | | | | |
|---|--|---|---|---|---|
| I was GP patient during the COVID-19 pandemic | | | | | |
| During the COVID-19 pandemic, I was not family doctor patient | | | | | |
| During the pandemic, I was a GP patient: | 1 time 2 times 3 times 4 times 5 or more times | | | | |
| I rate the functioning of the health service in times of a pandemic on a scale of 1-5, where 1 is very bad and 5 is very good (please tick) | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

In part 2 of the questionnaire, a five-point Likert scale was used, in which, depending on the question category, 5 points were awarded for high or low satisfaction/agreement with the given statement. The first pool of questions concerned people who were patients of family medicine clinics during the pandemic and was aimed at examining the level of satisfaction of these people with the visit, where "1" meant satisfaction at a "very poor" level, and "5" meant high satisfaction with services (Table 2).

Table 2.

Questions related to patient satisfaction with the basic characteristics of a visit to a medical clinic

| | <i>Very low</i> | | | | <i>Very high</i> |
|---|-----------------|---|---|---|------------------|
| 1/ I am satisfied with the last visit provided by the family clinic during COVID-19 to the extent of: | 1 | 2 | 3 | 4 | 5 |
| 2/ I describe my level of satisfaction with the contact with a family doctor (first contact doctor) as: | 1 | 2 | 3 | 4 | 5 |
| 3/ I describe my level of satisfaction with the speed of the visit to the health center as: | 1 | 2 | 3 | 4 | 5 |
| 4/ I describe my satisfaction with the medical advice as: | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

The next part of the questionnaire was an analysis of the expectations of patients in relation to medical clinics, which were born with the outbreak of the pandemic and changes in the functioning of the Polish health care system. They referred to the priority in access to medical services provided to some people (patient categorization), as well as COVID-19 tests and the extent to which patients care about introducing or continuing these changes. Some examples are shown below (Table 3).

Table 3.

Questions examining patients' expectations towards the activities of medical clinics

| | <i>I do not care</i> | | | | <i>I care a lot</i> |
|--|----------------------|---|---|---|---------------------|
| 1/ Patients should visit their doctor safely, so as not to expose them to the possibility of contracting an infectious or viral disease. | 1 | 2 | 3 | 4 | 5 |
| 2/ Access to prescription drugs should be greatly facilitated in times of the COVID-19 pandemic. | 1 | 2 | 3 | 4 | 5 |
| 3/ Tele-advice provided by GPs should only be reserved for those in isolation/quarantine or suspected COVID-19 infection. | 1 | 2 | 3 | 4 | 5 |
| 4/ Tele-advice should be conducted only in the case of prescribing, and not for diagnosing a patient. | 1 | 2 | 3 | 4 | 5 |
| 5/ Patients in quarantine/isolation should have priority access to GP advice. | 1 | 2 | 3 | 4 | 5 |
| 6/ People over 60 years of age should have priority access to a general practitioner. | 1 | 2 | 3 | 4 | 5 |
| 7/ All patients should be treated the same regardless of age, presence of comorbidities, etc. | 1 | 2 | 3 | 4 | 5 |
| 8/ First aid should be provided regardless of the COVID-19 test result. | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

The fourth set of questions illustrated the current situation in clinics and medical centers. The respondents could determine to what extent the given statements are (5 points) or not (1 point) true (Table 4).

Table 4.
Statements about the situation in health care clinics

| | <i>Not true</i> | | | | <i>True</i> |
|--|-----------------|---|---|---|-------------|
| 1/ Patients are seen in person by a general practitioner. | 1 | 2 | 3 | 4 | 5 |
| 2/ Patients are seen by a doctor in a safe manner (in a way that does not expose them to infection). | 1 | 2 | 3 | 4 | 5 |
| 3/ Access to medicines in times of a pandemic in much easier. | 1 | 2 | 3 | 4 | 5 |
| 4/ Tele-advice is only provided for people in quarantine/home isolation. | 1 | 2 | 3 | 4 | 5 |
| 5/ Tele-advice is for the sole purpose of prescribing a prescription and not for diagnosing a patient. | 1 | 2 | 3 | 4 | 5 |
| 6/ Patients in quarantine/home isolation have priority access to their GP. | 1 | 2 | 3 | 4 | 5 |
| 7/ All patients are treated the same regardless of age, presence of comorbidities, etc. | 1 | 2 | 3 | 4 | 5 |
| 8/ First aid is given regardless of the COVID-19 test result. | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

The next 13 questions concerned observations in relation to the work of medical clinics and were a kind of development of the previous category with the general situation in the Polish health service, and thus often controversial behavior towards the patient. The respondents had the opportunity to determine the degree to which they agreed with a given observation. Some of the statements are presented in Table 5.

Table 5.
Statements about phenomena in healthcare since the outbreak of the pandemic

| | <i>I strongly agree</i> | | | <i>I strongly disagree</i> | |
|--|-------------------------|---|---|----------------------------|---|
| 1/ Patients have limited access to medical advice during the COVID-19 pandemic. | 1 | 2 | 3 | 4 | 5 |
| 2/ There is a problem with obtaining a prescription for medications prescribed by a general practitioner. | 1 | 2 | 3 | 4 | 5 |
| 3/ There is a problem with obtaining a prescription for medications prescribed by a specialist doctor. | 1 | 2 | 3 | 4 | 5 |
| 4/ There is a problem with consultation/obtaining a referral for a test in the case of suspected COVID-19 infection. | 1 | 2 | 3 | 4 | 5 |
| 5/ There is a problem with getting a referral to a specialist doctor from a general practitioner. | 1 | 2 | 3 | 4 | 5 |
| 6/ The COVID-19 pandemic has drastically worsened the outlook for the quality of medical services provided to chronically ill people. | 1 | 2 | 3 | 4 | 5 |
| 7/ I have concerns about the functioning of the health care system in Poland as the duration of the COVID-19 pandemic increases. | 1 | 2 | 3 | 4 | 5 |
| 8/ The waiting time for assistance in the hospital emergency room was significantly extended. | 1 | 2 | 3 | 4 | 5 |
| 9/ The waiting time for the arrival of an ambulance was extended due to the lack of information about the patient's infection. | 1 | 2 | 3 | 4 | 5 |
| 10/ Due to the uncertainty of the staff related to the possibility of contact with a patient infected with COVID-19, the waiting time for providing emergency medical care was extended. | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

The last part of the questionnaire was intended to trace the characteristics of medical services that patients consider to be key. Among the potentially significant attributes are the speed of actions taken, the availability of doctors and medical assistance, and the safety of visits (Table 6).

Table 6.

Questions on the key features ensuring the quality of services provided by medical clinics

| | <i>Irrelevant</i> | | | <i>Very important</i> | |
|---|-------------------|---|---|-----------------------|---|
| 1/ The speed of obtaining medical advice. | 1 | 2 | 3 | 4 | 5 |
| 2/ Ease of access to prescriptions and prescription drugs. | 1 | 2 | 3 | 4 | 5 |
| 3/ Minimizing the risk COVID-19 infection. | 1 | 2 | 3 | 4 | 5 |
| 4/ Speed of obtaining referral to specialist doctors and further diagnostics. | 1 | 2 | 3 | 4 | 5 |
| 5/ Access and speed of consultation and referral for a test in the case of suspected COVID-19 infection. | 1 | 2 | 3 | 4 | 5 |
| 6/ Access to medical assistance that does not require hospitalization. | 1 | 2 | 3 | 4 | 5 |
| 7/ Access to medical aid, including respirators, regardless of the patient's age and coexisting diseases. | 1 | 2 | 3 | 4 | 5 |

Source: own work based on SERVQUAL Method.

3. Results

A total of 50 people participated in the survey, of which 15 people marked the gender "female" and 10 people marked "male." The remaining individuals did not provide an answer about their gender. Of the total respondents, only 25 people answered about their age. Under 20 – 0 respondents, between 20 and 30 years old – 3 respondents, between 30 and 40 years old – 7 respondents, between 40 and 50 years old – 6 respondents, and over 50 years old – 9 respondents. There were 25 responses regarding the respondents' education – 14 respondents said they had a high school education, 11 respondents said they had a college education, and no one indicated they had only primary education. Most respondents mentioned Świętochłowice (38 responses), followed by Zabrze (4 respondents), Gliwice (1), Tarnowskie Góry (1 respondent), Katowice (2) and Chorzów (4).

As many as 41 out of 50 respondents answered that they were a patient of their family doctor during the pandemic. Moreover, the frequency of these visits according to the collected responses was as follows: 1 time accounted for 29% of responses, 2 times was 24%, while 3 times was 22%, and 4 times and 5 or more times were 12% each. When asked to rate the functioning of the health service during the pandemic, respondents most often chose the rating 3 (34%), followed by rating 4 (23%), ratings 1 and 5 received the same number of votes (15% each), and rating 2 was chosen the least often (13%). Thus, it can be concluded that the

overall assessment of health care during the pandemic is average, but leans nonetheless towards a good rating.

Among respondents, satisfaction with medical care is overwhelmingly positive. In one question about satisfaction with the last visit, the highest rating was 5 – very good (43%). Satisfaction with doctor contact was rated similarly high, with the highest score receiving 26 votes (59%). Also, the speed of the visit, i.e. waiting time for the visit, according to the respondents' answers, was rated overwhelmingly positive. The survey also shows that the medical advice received met the expectations of the respondents.

The most important expectations of patients about the outpatient clinic include personal visits with a general practitioner (48% definitely yes), carrying out medical visits in a safe manner, i.e. not exposing patients to infection (71%), and easy access to prescription drugs (68%). In addition, more than half of respondents indicated that telehealth should be reserved for those in quarantine, and should be conducted only when prescriptions are being written, not when diagnosing a patient. Another of the respondents' expectations was that health centers should be able to test for COVID-19 (more than half of the votes). Respondents also felt that patients in isolation or quarantine and those over the age of 60 were more likely to have priority access to a primary care physician, but equally high marks were given to the statement that all patients should be treated the same regardless of age or presence of comorbidities. Respondents unanimously agreed that first aid should be provided regardless of COVID-19 test results (93% definitely yes).

The current situation in health care clinics is assessed rather well. Nearly half of the respondents (57%) state that patients are seen in person by a general practitioner and access to prescription drugs during a pandemic is facilitated. According to the responses collected, the way patients are admitted does not put them at risk of infection, but voices are divided on the issue of equal treatment. It can be said that the expectations of the respondents are consistent with the present situation.

Observations about clinic services during the COVID-19 pandemic tended to suggest that patients are unlikely to have limited access to medical advice and that there is little risk of infection during a face-to-face visit to a doctor. Furthermore, it was felt that there are unlikely to be problems in obtaining prescriptions from both GPs and specialists, and there are no major problems in obtaining consultations and referrals when COVID-19 infection is suspected. However, it was pointed out that there may be some problems in obtaining referrals to specialists from GPs. It was unanimously assessed that people over 60 years of age do not have a problem accessing a doctor and there is no problem in obtaining emergency care. The survey also shows that according to the respondents, the COVID-19 pandemic did not drastically affect the deterioration of the quality of life, and concerns about the functioning of the healthcare system in Poland are not significant, but according to the assessments, the waiting time for the arrival of an ambulance and first aid in the hospital emergency room has rather increased.

The following were considered crucial for the quality of medical services provided by outpatient clinics: speed of obtaining medical advice, ease of direct access to a general practitioner and prescriptions and prescription drugs, minimizing the risk of COVID-19 infection, speed of obtaining referrals and availability of consultations in case of suspected infection, access to medical assistance (which does not require hospitalization), and access to medical assistance including ventilators regardless of the patient's age and coexisting diseases.

4. Conclusions

In summary, it can be said that the respondents rate the state of health care in Poland as good, they did not perceive significant problems with access to telemedicine and visits to general practitioners or specialists as well as with obtaining and filling prescriptions. However, the survey found that the waiting time for an ambulance to arrive and the response time of emergency medical services have increased. Respondents' voices are divided when it comes to priority access to a general practitioner for people with comorbidities, those over 60 and those in quarantine or home isolation. Respondents also believe that currently all patients tend to be treated equally regardless of diseases and conditions, age, or being in quarantine or home isolation. Thus, it can be concluded that all respondents expect to be assured of equal treatment by the health service in accessing medical services and that clinics maintain high availability and quality of medical services despite the COVID-19 pandemic. With the pandemic, anxiety about health and the future has undoubtedly increased in many people, which reduces mental well-being. It is understandable that every patient expects that if they observe symptoms of COVID-19 disease, they will receive professional help quickly enough. 57% of patients who had a chance to see a doctor directly are still too small a number to speak of unwavering behavior in the functioning of the Polish health service. Referring to the noticeable trends in unequal treatment of patients, it can be concluded that the remaining 43% are patients who were refused direct advice. This phenomenon, combined with extended waiting times for first aid or the arrival of an ambulance, can significantly increase patient mortality due to the so-called comorbidities that were ignored for fear of potential COVID-19 infection. One might be tempted to say that the pandemic itself, the virus that caused the pandemic, does not threaten us as much as the side effects it entails. We are talking about the growing importance of online medical services, online diagnostics, which lead to a decrease in the detection of potentially more lethal diseases than COVID-19, e.g. cancers, or delays in starting their treatment. The respondents pointed out that medical facilities provided meeting conditions that did not expose patients to COVID-19 infection, hence it seems unjustified to use tele advice for patients not under compulsory quarantine. The respondents' answers also show that the speed of medical assistance provided during a pandemic is more important to them than protection against virus infection. Therefore, it seems that the only solution improving the functioning of the Polish

health care system is the recognition that every patient, regardless of age or coexisting diseases, deserves equal help. It is worth paying attention to the results of the research in the context of previous work carried out as part of projects on satisfaction with the functioning of the health service during a pandemic. From the point of view of the results of the study, the publications on the satisfaction of health care workers with personal protective equipment are important. The results of the publications, which were written by Orzeł, B., Horodecka A.M. and Orzeł, B., Wolniak, R. (Orzeł, Horodecka, 2020; Orzeł, and Wolniak, 2021) show that specialists dealing with patient care in Poland are also rather satisfied with the personal protective equipment offered to them. . As in the case of patients, the biggest problem concerns soft aspects in medical facilities such as information, appropriate allocation of places, facilities, etc. Thus, on the basis of the surveyed sample and data analysis, it can be concluded that the hard aspects of medical care in Poland, such as access to a doctor, access to personal protection measures, the sense of security are at the appropriate level to be able to provide basic medical care even in times of a pandemic.

Thinking in the context of future research on the phenomenon of satisfaction, it would be worth conducting a similar study among patients referring to specific specialist doctors. Perhaps, then their opinions would differ from the opinions of patients referring to general practitioners presented in this publication. It is also worth considering conducting a similar study in a larger number of patients.

Acknowledgements

This article was published from the funds granted to the Student Quality Management Association as part of the Inicjatywa Doskonałości – Uczelnia Badawcza project and is a presentation of the results of the research carried out as part of the project “Badanie Poziomu Jakości Świadczenia Usług Medycznych w Śląskich Przychodniach w Czasach Pandemii COVID-19”.

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IMPROVEMENT OF WAREHOUSE PROCESSES BY IMPLEMENTATION OF LEAN SIX SIGMA IN GLOBAL SUPPLY CHAIN

Monika KAMIŃSKA

Department of Business Logistics, University of Economics in Katowice, Poland;
monika.m.kaminska@uekat.pl, ORCID: 0000-0003-0853-021X

Purpose: Nowadays businesses concentrate on the highest efficiency and lowest waste, that's why some organizations implement Lean Six Sigma as a complete package of adapted tools. This article evaluates the implementation of the Lean Six Sigma method.

Design/methodology/approach: The case study presents an approach and project scheme adjusted by Global Supply Chain Manufacturer. This paper shows the results of the LSS method implementation in the internal and 3rd Party Logistics distribution center.

Findings: This warehouse process improvement method uses tools like ECRS for process map, Cause-and-Effect Diagram, 5Why&1How analysis, Spaghetti Diagram, Flow Process Analysis sheet, and Action Plan.

Practical implications: This article evaluates three logistics processes in two distribution centers where LSS has been applied: handling process and twice picking process. Results provide enhanced process and saving for owned DC (0,8m€) and lower rates in 3P DC (saving 2m€).

Originality/value: Project was so satisfactory for the corporation that it developed global online training. The case company represents a significant source of information to gain understandings of the effects of implementing LSS in warehousing services.

Keywords: Lean Six Sigma, Six Sigma, supply chain, warehouse process, continuous improvement.

Category of the paper: Case study.

1. Introduction

During past decades, continuous development of cooperation and commitment between parties of the supply chain (SC) can be noticed. It is dictated by economic aspects, the market year by year demands better quality for a lower price. Partners in the SC share the knowledge and experience to deliver improved services and products. Various companies use different methodologies, approaches, and tools of available continuous improvement programs.

It is important to choose the best set of approaches, tools, and techniques for a specific organization (Gupta, et al., 2018).

Lean Six Sigma (LSS) is an approach that combines Lean and Six Sigma tools and methodology to enhance quality, reduce process variations, and eliminate non-value added activities. The first step is to identify waste within the organization and its elimination. That reduces process variation (Salah, et al., 2011). This paper evaluates the application of LSS within the SC, as a set of approaches and tools adjusted to enhance the existing logistic process. This paper will evaluate the implementation of LSS methodology on warehousing processes in the Global FMCG Supply Chain. The key goal is to analyze the LSS impact on internal and Third Party Logistics (3P) warehouses. Considering 3P warehouses, the question is how to convince this partner to join the project and then how to exploit the developed improvement. What are the possibilities to share the experience and knowledge within the whole Global Supply Chain?

Considering the questions and goals of the research project, the research methodology chosen is the Case Study. The paper describes the practical implementation of the LSS project in the warehouse processes of an internal and 3P warehouse.

2. Literature review

This section defines separate methods Lean Management and Six Sigma, and a holistic approach of LSS. At the end of this section, the role of logistics in SC and LSS implementation possibilities will be described.

2.1. Lean Management

Lean Management is one of the most common and widely known methods of industry management. It is also known as Lean Manufacturing or Lean Production or just Lean (Bogacz & Migza, 2016). The concept of Lean Management has its origin in the Toyota Production System (TPS). TPS contains manufacturing techniques and tools developed by Taiichi Ohno and associates soon after the Second World War. A need for a shortage of resources and capital drove it. The owner of Toyota Motor Company Eiji Toyoda instructed his workers to eliminate all waste (Pepper & Spedding, 2010).

The goal of Lean Management is to improve the efficiency of industrial organizations. There are two main instructions: eliminate every waste in every process and place humans in the center of the process, to take advantage of their effectiveness (Sousa, et al., 2013).

Waste is defined as “anything other than the minimum amount of equipment, materials, parts, space, and time essential to add value to the product” (Russell & Taylor, 2000). Within the process you may find eight types of waste: overproduction, waiting,

transportation, processing, inventories, moving, defects, behaviors/skills (Emiliani & Stec, 2004), (Harry, et al., 2010).

Together with waste elimination, Lean Management focuses on value adding operations. Added value is a value for which the client is willing to pay. Analyzing processes three types of work can be identified:

1. VA (value added) – operations increasing product or service value, the client expects and accepts it, for example, quality control.
2. BVA (business value added) – operations not increasing the value of product or service but are necessary in the current process, for example, maintenance.
3. NVA (not-value added) – redundant operations, which must be eliminated, for example, waiting for a battery change (Hamrol, 2018).

Summarizing, Lean is the most effective usage of organizational resources – make more with fewer resources (Abdi, et al., 2006).

2.2. Six Sigma

The Six Sigma methodology was developed in the 1980s by engineer Bill Smith at Motorola company (Snee, 2010). This approach concentrates on problem-solving. Six Sigma tools are designed to improve processes and products. Its goal is to reduce the number of defects and events. Six Sigma technical goal is to minimize the variation of the process so there will be no more than 3 defects per million parts (Brussee, 2012). Six Sigma's goal is to reach perfection in each company's process (Narula & Grover, 2015) to deliver organizational excellence and competitive advantage on the market (Chakrabarty & Tan, 2007).

The Six Sigma to solve problems uses the DMAIC approach: Define, Measure, Analyze, Improve, Control. The DMAIC method concentrates on specific tools and techniques.

1. Define: this step identifies customers with their requirements, and core business processes.
2. Measure: this step measures and collects data regarding current process performance.
3. Analyze: this step identifies the difference between the current and desired process, this comparison shows defects in the current process.
4. Improve: this step implements solutions to remove identified defects.
5. Control: implemented changes are controlled, so the improvement is at its best (Jayaram, 2016) (Vlasov, 2018).

2.3. Lean Six Sigma

Development of continuous improvement methodologies Lean Management and Six Sigma that gives strengths of both is its combination: Lean Six Sigma. LSS uses tools and philosophies from both to improve quality, reduce process variation and eliminate not-value adding activities (Salah, et al., 2011).

Salah et al. describe LSS as a “methodology that focuses on the elimination of waste and variation, following the DMAIC structure, to achieve customer satisfaction regarding quality, delivery, and cost. The LSS focuses on improving processes, satisfying customers, and achieving a better financial result for the business” (Salah, et al., 2010).

Lean Management and Six Sigma are complementary. Six Sigma is driven by Lean giving better results than Lean and Six Sigma separately (Bhuiyan & Baghel, 2005). A combination of these two methodologies provides the project team with a complex set of tools. These tools improve the speed and quality of each process inside the organization, giving higher profits, lower costs, and better cooperation (Bogacz & Migza, 2016). LSS project as a combination uses some Six Sigma tools or Lean Management tools or a mix of those, depending on what is suitable for the project (Salah, et al., 2011). Figure 1 presents some examples of Six Sigma, Lean Management, and shared tools.

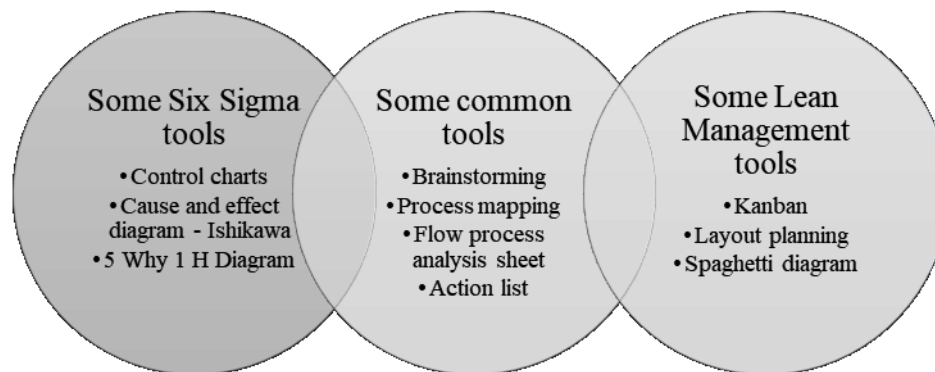


Figure 1. Examples of Six Sigma, Lean Management, and common tools. Adapted from: (Salah, et al., 2010) and (Hamrol, 2018).

2.4. LSS in Global Supply Chain’s logistics

A Global Supply Chain (GSC) involves suppliers, manufacturers, distributors, retailers, and customers. A GSC is a very complicated type of SC as it has parties in different regions, demographics, currency, economic policies, and taxation laws. When all the parties execute responsibilities in a harmonized approach, an effective GSC is established. Each of the parties of a GSC can be in different geographical locations (Jayaram, 2016).

Organizations “plan, evaluate, improve and optimize their SCs as it helps the enterprise to grow over a period of time”. Effective managing of SC leads to costs reduction, faster deliveries, and higher customer satisfaction (Jayaram, 2016). Effective and efficient management of SC leads to achieving a competitive advantage (Rahman, 2006). An efficient and effective SC can be achieved by quality control (Jayaram, 2016). Therefore, managers must develop skills in quality tools, with a focus on continuous improvement. Quality improvements should be applied regularly, mostly in main logistics functions: transport, warehousing, and inventory control (Rahman, 2006). Considering the aforementioned, it is crucial to provide

a precise overview of logistics performance. Logistics services are the perfect area to apply LSS and continuous improvement programs (Gutierrez, et al., 2016).

3. Case Study

This case study concentrates on an organization that produces consumer goods. The company is a manufacturer in GSC, which produces and sells products of over 400 brands in more than 190 countries. This company produces among other foods, home, and personal care products, ice-creams, and beverages. The name of the company, position names, and program names are not disclosed for confidentiality purposes.

The company implemented sub-organizations called the operation center to handle logistics, financial, master data, and purchasing operations. There are one or more locations to handle one continent. In Europe, the company's operation center is in Poland.

A few of the operations handled by the Polish operation center are:

- transport organization from suppliers to production sites, from production sites to DC, from DCs to retailers warehouses,
- control over regional warehouses and DCs,
- implementation of improvement processes and programs, among others LSS programs.

Within the company, the LSS project was developed in Europe's operation center. The company decided to start the implementation of the LSS program with warehousing processes mostly in DCs, but also in production unit warehouses. For LSS implementation within the operation center responsible unit is "LSS champion".

3.1. LSS Project timeline, scheme, team, tools

The company assumes that the LSS project should be conducted in each DC and some production unit warehouses. The order of locations depends on current processes' quality, costs level, upcoming agreement renewal with the 3P DC, and others. This decision is made by the logistic manager responsible for the geographical region. It is important to plan the improvement schedule with priority on the most critical matters, but without an end – it is a continuous plan.

When the location is chosen, the timeline in Figure 2 is applied. For the LSS project, the company shares its knowledge and team: LSS champion and logistic manager. From investigating location local site management team is required and during the workshop, some employees are needed. The local site management team must be aware of warehouse processes.

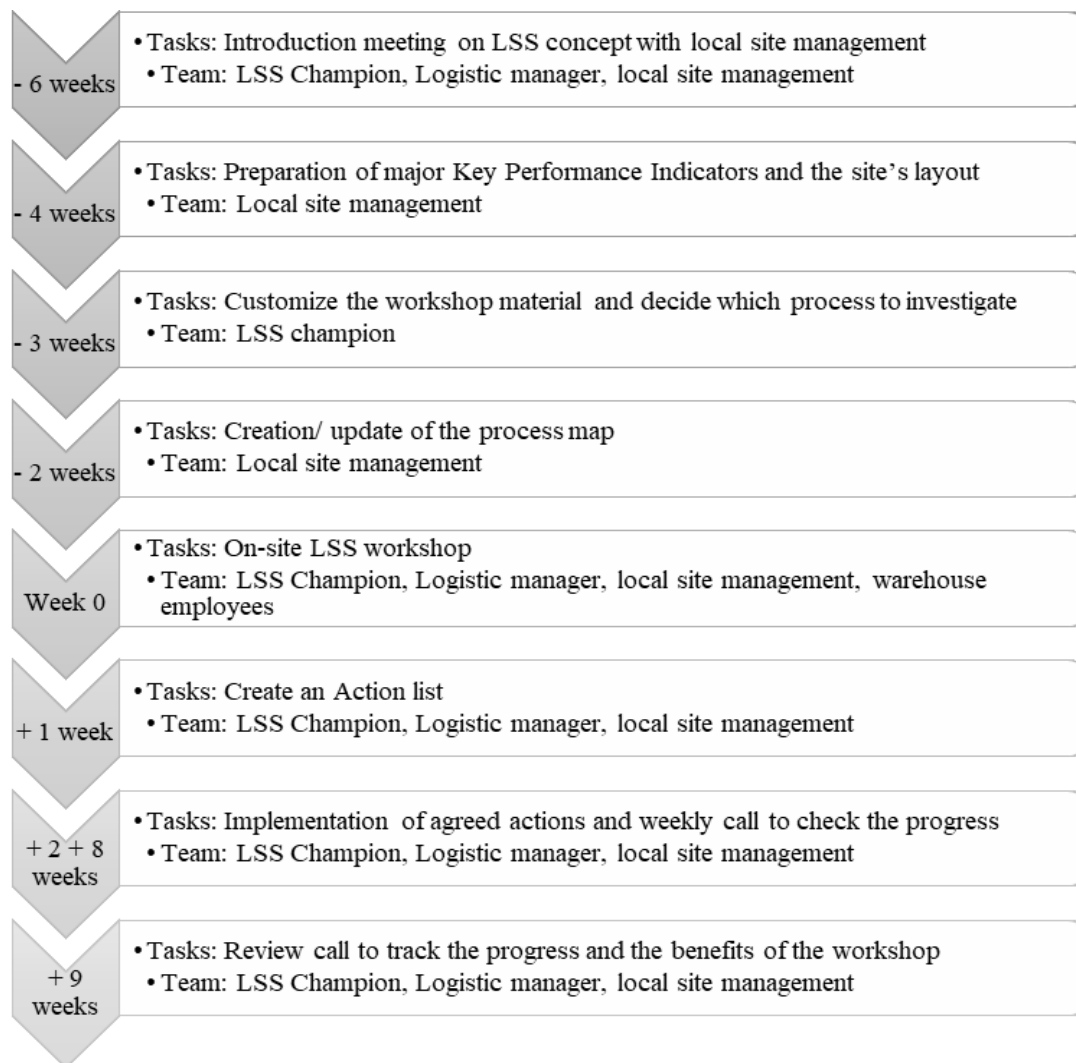


Figure 2. The LSS project timeline. Source: own creation based on own experience.

When the data and proper information is prepared, the two-days workshop is conducted. The company adjusted the DMAIC approach for their own LSS project purpose and change it to Analysis, Identification, Design, Implementation. LSS project is continuous improvement so these steps will repeat regularly, Figure 3.

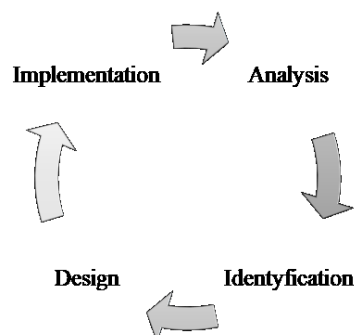


Figure 3. LSS continuous cycle. Source: own creation based on own experience.

Each of these steps plays an important role in the LSS project, and is adapted with LSS tools.

3.2. Analysis phase

The Analysis phase describes the characteristics of the warehouse, process steps, improvement opportunities, and what is happening on the floor. This phase uses two LSS tools: process map and cause-and-effect diagram.

“A process map is a graphical representation that shows a sequence of activities/steps represented by flowchart symbols”. It shows a visual description of the process (Harry, et al., 2010). The visual aspect helps in the process's understanding, and it's important to review the process map at this step of the LSS cycle. Example presented in Figure 4.

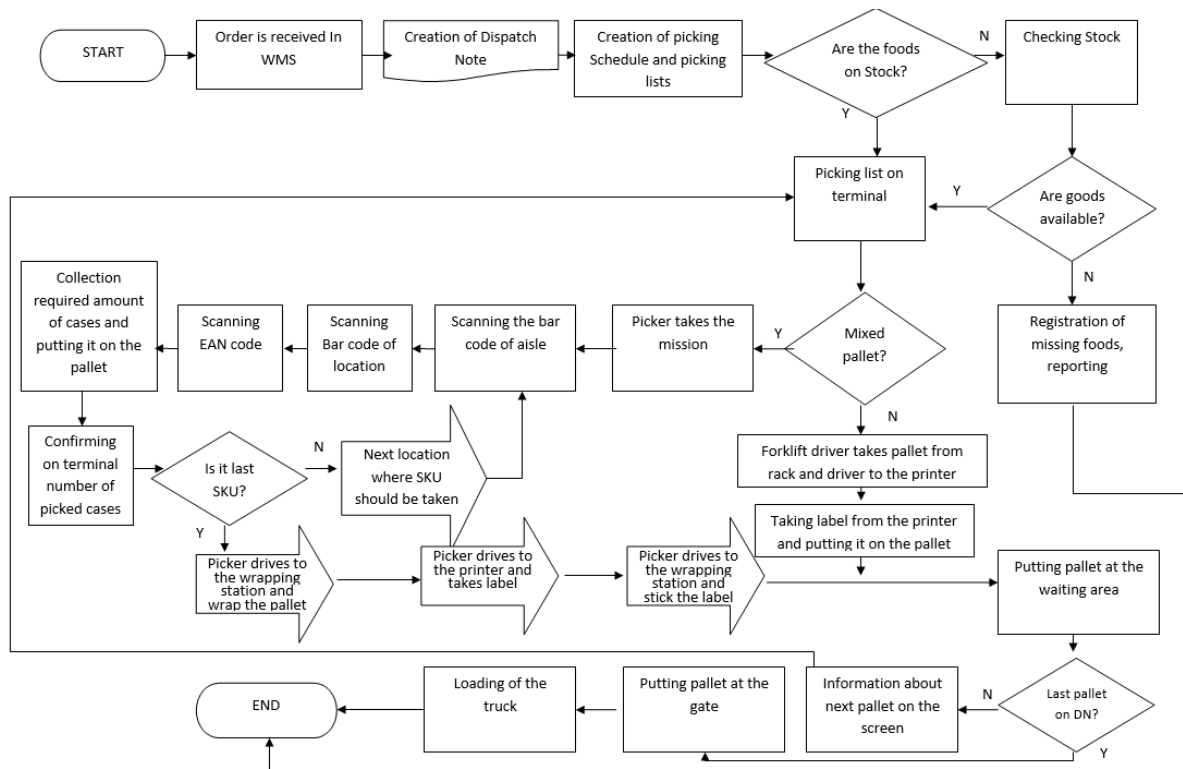


Figure 4. Process map example. Source: own work based on own experience.

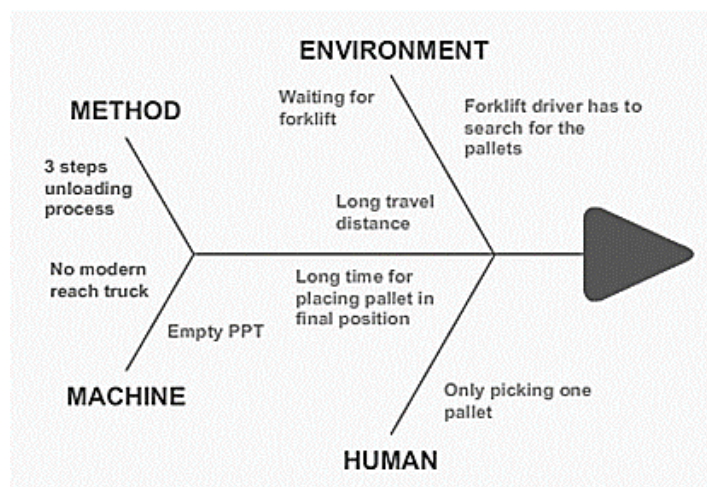


Figure 5. Cause-and-effect diagram example. Source: own work based on own experience.

The cause-and-effect diagram is also known as the Ishikawa diagram or the Fishbone diagram. A cause-and-effect diagram is an analysis tool that proposes a systematic way of seeing effects and the causes that create those effects. The shape of the diagram leads LSS team members to think systematically. This diagram helps to identify the root causes of a problem using a structured method, encourages group involvement, and uses group knowledge of the process, identifies areas where data should be collected for more detailed analysis (Ciocoiu & Ilie, 2010). The diagram example is shown in Figure 5.

3.3. Identification phase

The Identification phase is an important step when the LSS team goes to the warehouse and observes the process steps on the floor in real-time. This phase shows the real material flow and points inefficiencies, in particular wastes. The LSS team uses a flow process analysis sheet, travel-and-material flow diagram, and 5Why&1How analysis in this step. All workshop members go to the warehouse where the diagnosed process is running. The team needs to have an empty flow process analysis sheet, printed layout of the warehouse, and a stopwatch. Then the team follows one ware-house employee at a time who executes the process, for example, a picker who collects an order. Detailed data must be noted: time spends on each operation, the distance between each operation, type of operation, the value of the operation, and comments, for example, see Figure 6.

| Process Elements | | Distance | Time | VA | NVA | Waste | Comments |
|---|-----|----------|-------|----|-----|-------|--|
| 1 The picking list appears on the touch screen / Picker drives to the picking zone | ○ ⇒ | 50m | 30s | | X | | "Parking" for power pallet truck should be closer to the picking zone |
| 2 Picker collects the cases on the pallet | ○ | 20m | 20min | X | X | | The picking path should be more optimized, so the picker won't drive twice in the same place |
| 2a The cases on the pallet are not enough for the order / replenishment of pallet | ▽ | 200m | 15min | | | X | The replenishment pallet (at least one) should be closer to the picking zone, if possible on ground floor, so power pallet truck driver would be able to replenish himself |
| 3 Picker drives with the pallet to the office for papers and labels | ⇒ | 50m | 2min | X | X | | The printer for papers and labels is very far from picking zone |
| 4 Picker drives with the pallet to the stretching machine / Pallet is being stretched | ⇒ | 10m | 2min | X | X | | Stretcher is also very far from picking zone, maybe solution would be replacement of picking zone? |
| 5 Picker drives with the pallet to the outbound zone where the pallet will be loaded on the truck | ⇒ | 30m | 1min | | X | | If the printer and stretcher would be near outbound zone, this step would be reduced |

Figure 6. Flow process analysis sheet example. Source: own work based on own experience.

At the same time another LSS team member draws lines with marking operations number on the warehouse layout – this way they will create a travel-and-material flow diagram, also called the Spaghetti diagram. The example is presented in Figure 7. These two steps should be repeated a few times, as inefficiencies may appear randomly.

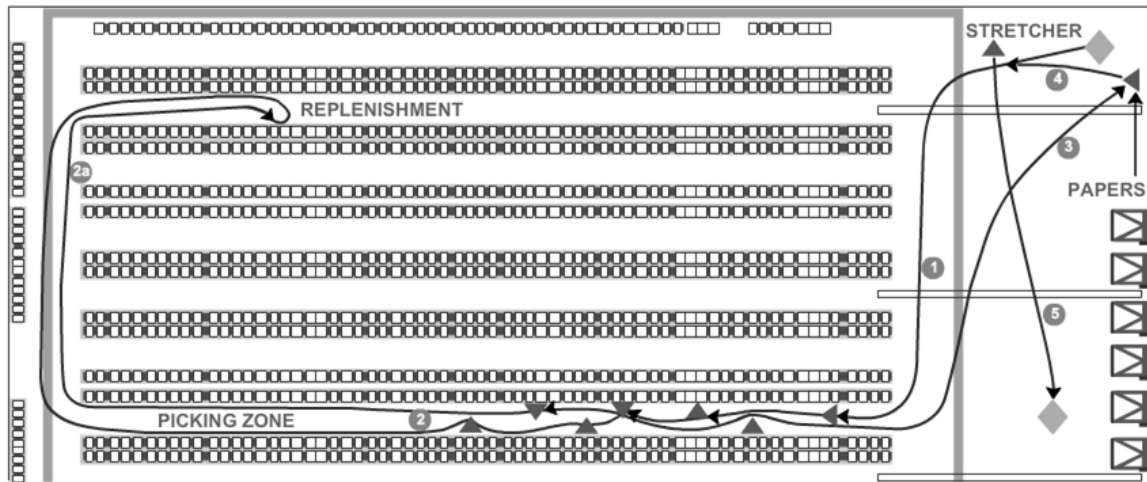


Figure 7. Spaghetti diagram example. Source: own work based on own experience.

When real-time process observation is finished, the team analyzes wastes with 5Why&1How analysis, see example in Figure 8. 5Why&1How analysis helps to identify the root cause and range of the problem. Such detailed information benefits in finding the right problem solution.

Why replenishment takes about 15min?

| | Timeframe | 30min | Sporadic/ Chronic | C | S |
|---|--|--|----------------------|---|---|
| | Question | Comments | | | |
| W | What: In which process step a problem is seen? | The problem is seen at the 2nd step of the picking process | | | |
| W | When: When was the problem detected? | After 5th pallet | | | |
| W | Where: At which place happened the problem? | In the picking zone to replenishment zone | | | |
| W | Who: Has the problem to do with personnel capability? | No, it is connected to the method | | | |
| W | Which: Do you see a trend in this problem? | No, it is the constant problem | | | |
| H | How: How far is the process from the standard process? | It is very far from the standard process, replenishment should take max. 3min. | | | |

Figure 8. 5Why&1How analysis example. Source: own work based on own experience.

3.4. Design phase

The Design phase determines the changes in the process. To eliminate wastes, solutions are created and presented in a new process map. This phase uses the ECRS tool and an Action list.

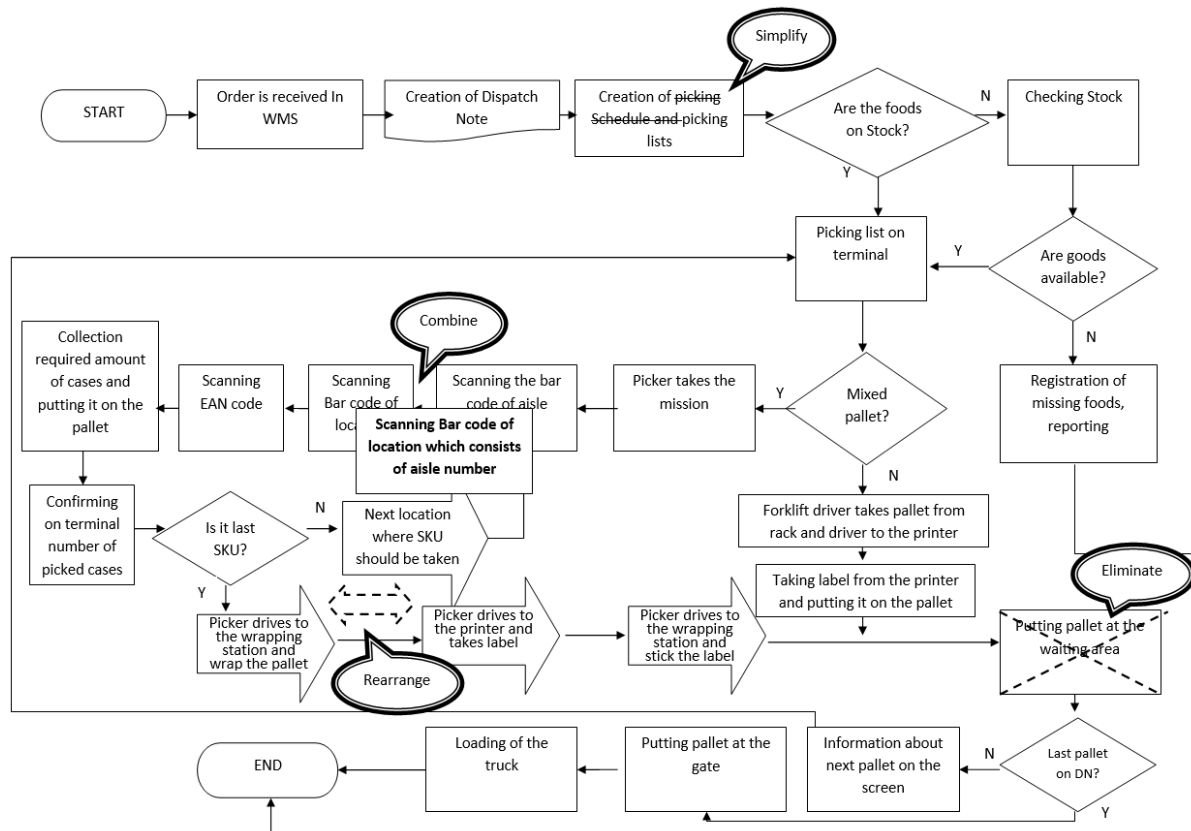


Figure 9. ECRS tool example. Source: own work based on own experience.

The ECRS tool helps to find improvements in the process map. ECRS includes 4 steps: Eliminate, Combine, Rearrange, Simplify. First, eliminate unnecessary operations, then combine different operations in the process, next rearrange the sequence of different operations, and at last simplify current process' operations. The example presented in Figure 9 corresponds with the process map from Figure 4.

All the changes designed during the workshop are presented in the Action list tool. The Action list contains the type of the process, list of changes to be implemented, responsible persons, date when the solution was raised, date when implementation should be finished. Making the Action list is critical, as it is proof of the workshop efficiency and shows who is the responsible party. At last, it helps in the Implementation phase. The action list with examples of designed actions is shown in Figure 10.

| Nr | Area | Action | Owner | Date Raised | Date completed by | Status 15.10.2018 | Status 05.11.2018 | Status 12.12.2018 | Potential Savings | Actual Savings |
|----|---------|---|--------------|-------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|
| 1 | Picking | Change of location of power pallet truck - closer to the picking zone | WH team | 23.09.2018 | 27.09.2018 | In progress | Done | Done | 580h annually | 400h annually |
| 2 | Picking | Better allocation of SKU's in the picking zone - optimization of picking path | WH team | 01.10.2018 | 31.11.2018 | In progress | In progress | Done | 1000h annually | TBC |
| 3 | Picking | Quarterly control of picking layout | WH team | 23.09.2018 | ongoing | In progress | Ongoing | Ongoing | unknown | unknown |
| 4 | Picking | Checking possibility of placing replenishment pallets behind the pallets meant for picking (deeper in the rack) | WH team | 23.09.2018 | 31.03.2019 | Not yet started | In progress | Done | 110h annually | 90h annually |
| 5 | Picking | Checking with quality if the goods are stored in appropriate temperature / chamber | LSS champion | 23.09.2018 | 31.10.2018 | In progress | Done | Done | unknown | unknown |

Figure 10. Action list example. Source: own work based on own experience.

3.5. Implementation phase

In the Implementation phase, parties execute tasks agreed during the workshop and stated in the Action list. That is the one stage that happens after the workshop. During the Implementation phase, the LSS team is running regular – weekly/monthly calls to check the status of listed actions. In this phase, what is critical potential and actual saving is calculated.

When this phase is finished, the LSS team prepares for the next workshop, to investigate another process or another warehouse.

3.6. LSS project results in an internal distribution center

By this time the company has conducted many LSS workshops across Europe and more. One of the workshops concentrated on the picking process in German oil and fats DC. This DC is loading ca. 11000 trucks with over 270k full pallets and more than 30k mixed pallets each year. It has a capability of over 17k pallet spaces. It is an internal DC, owned by the company. Any improvement change brings actual and direct savings to the company. Cooperation with the internal DC is smooth, as the entire LSS team belongs to the company.

During the workshop, many inefficiencies were recognized. Among other below changes were implemented:

- change the picking zone location,
- pallets machine automatization,
- upgrade of the picking trucks to the new ones,
- change the location of empty pallets,
- reduce the number of printed labels,
- upgrade of the stretching equipment.

Foregoing changes brought the saving of 130k EUR per annum delivered directly to the company's wallet.

3.7. LSS project results in a 3P distribution center

Another two workshops organized by the European LSS champion took place in a 3P warehouse in Austria. Firstly the picking process was investigated, secondly the handling process was examined. This DC handles a wide range of foods, both controlled and ambient temperature, as well as home and personal care products. This location handles almost 360k pallets, with incoming 3k trucks and outgoing ca. 7,5k trucks yearly. It has a capacity of 27,5k pallet spaces. Taking into consideration it is a 3rd Party Logistics warehouse, some difficulties were met. In the beginning, the LSS champion and the logistics manager had to convince the site managers about the benefits of the project. During the workshop the team faced resistance from warehouse floor employees, they were afraid of losing their position when inefficient. Last, of all, the company was concerned about how saving can be gained from the 3P provider.

Both workshops revealed many non-value adding operations and wastes. Some implemented changes:

- replenishment when minimum stock is 3 cases,
- change start location for picking process,
- mixing temperature-controlled goods with temperature neutral goods on one pallet,
- increased number of printers in the warehouse,
- started dock booking function,
- decreased number of empty runs – taxi driver must always drive with 2 pallets.

The implemented changes released the saving of 0,8m EUR yearly. It also allowed an increasing number of stored pallets to 6000 pallets more. Because of agreement renewal, the company negotiated services price reduction. These finally brought the company's savings of almost 2m EUR.

4. Discussion and conclusions

The LSS method benefits from a combination of two effective continuous improvement methodologies. The LSS can and should be adapted to a company's requirements. The approach and set of tools fit an organization's needs.

The paper presents how the LSS can make logistic processes better and this way improves customer satisfaction.

The LSS project within the company was tailored and a special scheme was created. The company adjusted the DMAIC method and introduced four steps, Identification, Analysis, Design, and Implementation. The LSS team uses many adapted tools to find areas of improvement.

The case study shows that in both examined DCs inefficiencies have been found. While in internal DC the project was carried out with simplicity, the 3P DC caused difficulties. Saving was presented immediately in internal DC, but in 3P DC the company collected benefits from improvements only when a new agreement was signed.

In general, the paper shows that the company is satisfied with the LSS project results. The company extends the range of the LSS project to other continents. At the same time, the European LSS champion shares the know-how and the LSS project scheme with all the company's co-workers by Learning Management System training. Considering the current situation when many office employees work from home, future research may focus on the results of running the LSS project remotely, through online meetings and workshops.

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**COOPERATIVES' MARKET ACTIVITIES IN THE SPHERE
OF SALES MARKETING. COMPARATIVE ANALYSIS
ON THE EXAMPLE OF DAIRY COOPERATIVES
FROM THE MAŁOPOLSKIE AND ŚWIĘTOKRZYSKIE
VOIVODSHIPS**

Izabela KONIECZNA

The Jan Kochanowski University in Kielce, Faculty of Law and Social Sciences, Department of Management;
irud@interia.pl, ORCID: 0000-0002-3632-3245

Purpose: The aim of the article is to identify activities creating value for the customer in the area of sales marketing and to compare them between the two neighboring voivodships, namely Świętokrzyskie and Małopolskie.

Design/methodology/approach: Direct interviews using a questionnaire survey were conducted among representatives of cooperatives representing 41% of the population, which resulted from the willingness to participate in the survey.

Findings: The analysis of the research results, taking into account two voivodships shows that although sales marketing activities have an impact on customer value, most of them are not carried out by all cooperatives. Moreover, in the case of other major markets, no action is taken. In most cases, the voivodship in which the cooperatives operate differentiates the undertaken activities.

Research limitations/implications: A limitation of the research is the range. It results from the fact that only cooperatives from two voivodships, namely Świętokrzyskie and Małopolskie were researched here. In addition, the research results are limited to one organizational and legal form of enterprises, i.e. cooperatives. It seems reasonable that further research should be at least nationwide and cover various organizational and legal forms of enterprises.

Practical implications: Analysis of the results allows enterprises' management to be more aware of the need of analyzing activities in the field of marketing sales more often, as it affects the value to the customer. Such awareness allows them to take appropriate steps to increase the scope of taken actions, and thus affect the value for the customer to a greater extent than the competition.

Originality/value: The comparison of market activities in the sphere of sales marketing of selected cooperatives from two different voivodships.

Keywords: customer value, market activities, sales marketing, cooperatives.

Category of the paper: Research paper.

1. Introduction

Marketing is a contemporary concept of human behavior in many areas of life. It can be considered from various points of view: all producers and consumers operating in a given economy (this is so-called macromarketing, important in the aspect of the functioning of non-profit organizations, understood as a social process) and the single producer and buyers of its products or services (this is so-called micromarketing, i.e. a management process that is a deliberate way of proceeding in the market, based on an integrated set of instruments and activities as well as market orientation, the purpose of which is to ensure the success of organizations) (Limański, 2007, pp. 50-51). Marketing activity in the field of micromarketing is the conduct of business entities and other organizations based on certain rules. It aims to understand and adapt to the market as well as influence on the demand and supply, taking into account the needs, requirements and preferences of final recipients, as well as the social and microeconomic point of view. By observing the mutually beneficial exchange and taking into account the postulates of the master plan, a given economic entity formulates a procedure program, then applies it and checks its implementation (Garbarski, 2011, p. 18).

Marketing and market orientation is the basic premise of business management. This allows to formulate the concept of strategic functioning of marketing in such organizational unit. Marketing activity is developed on the basis of the mission for which the company exists and on the basis of strategic goals (Durlík, 1995, pp. 265-266). Marketing is the process of researching a product in relation to the market, it is determining how to maximize the potential of a product in a given market. Careful and thoughtful marketing can help in finding the best sector of the market in which the company can be successful against the competition, and define the function that the product should fulfill. (Sampson, 1996, p. 51). Enterprises, through their activities involving sales marketing, strive to maximize value for the customer and the enterprise itself. In the case of the customer, this is to meet his expectations as much as possible. In contrast, partial objectives of marketing targeted on the value of the company are: (1) gaining and maintaining a high market position, reflected in the appropriate image and reputation of the company as well as in the market share, (2) shaping mutually beneficial partnerships with customers, (3) systematic expansion of the group of regular and loyal buyers, (4) strengthening the impact and effectiveness of the marketing tools held: product, assortment program, price instruments, distribution system and promotional assets (Niestrój, 2002, p. 176).

Marketing and sales consist of activities that deal with the analysis of markets and consumers, influencing the customer to make a purchase, and ensuring product availability through appropriate channels (Stonehouse, Hamill, Campbell, Purdie, 2001, p. 42). Marketing is the sum of certain very diverse activities related to the development of the product concept, the principles of pricing, forms of sale and forms of promotion of the company's products. In order to take effective action in each of these areas, the company needs information about

the market, i.e. knowledge about the behavior of buyers, about competitors. (Domański, 1994, p. 14) and own organization. At this point, the preparatory functions of marketing are indispensable, i.e. gathering market information; market research; product and assortment program planning; calculation and pricing; organizing a distribution system; planning promotional activities; control and analysis of marketing results (Czubała, 2012, pp. 289-290). The type of data at the company's disposal has a significant impact on shaping marketing strategies and, consequently, on gaining a competitive advantage and business development. The scope and features of the information obtained depend on the type of business activity, the functioning of a given industry and sector of the economy (Pieczykolan, 2005, p. 65). This is where the executive functions of marketing are used (advertising; sales activation; direct customer service: information, negotiations, contracting, sales, rental, complaints, etc.; freight forwarding; transport and forwarding; stock management of finished products/goods; customer service; invoicing and contract performance control) and supporting functions (financing: distributor crediting, installment sales, leasing, etc.; risk participation and insurance against its consequences) (Czubała, 2012, pp. 289-290).

Marketing is the focus on the customer that covers all the functions and processes of the organization, aimed at making promises in the form of value propositions, enabling the fulfillment of individual expectations resulting from these promises by supporting customers in the process of creating value and thus contributing to creating value in the processes undertaken in the company by its customers and other stakeholders (Garbarski, 2011, p. 20). A modern approach to marketing requires identifying and acquiring the most profitable customers – key for the company, and then appropriate management of relationships with them (Grzanka, 2009, p. 18). This selected group of recipients is the so-called the target market, and in this case, marketing consists in carrying out activities consisting in a thorough knowledge of the needs of a selected group of recipients and possibly perfect adaptation of the company's offer to the expectations of this group (Domański, 1998, p. 13). This main task of marketing in a company is to define consumer preferences and meet their needs and ideas in such a way that the company makes a profit and the buyer is satisfied with the transaction. (Żurawik, 1996, p. 16). This is because it is important for increasing sales efficiency and gaining a competitive advantage (Grzanka, 2009, p. 18).

2. Methods

The modern market is mainly created by the demand, and therefore by the customer. He is the recipient of the company's products / services, so the company must firstly identify him quickly, define his needs and try to discover his intentions that may guide his actions. They should be converted into effective demand through appropriate marketing activities

(Ławicki, 2005, p. 15). To achieve this, enterprises must undertake specific actions affecting the value for customers, which may include: offering products that are competitively priced, applying promotional prices, targeting end recipients, using loyalty programs, using consumer promotions (e.g. samples, coupons, contests, lotteries, gifts, etc.), use of public relations, use of publicity, wide sharing of information about the offer, offering products with a competitive warranty scope, individualizing the offer, offering products on favorable terms of payment/financing, applying special conditions of sale (discounts), offering products with a rich set of pre-, around- and after-sales services and offering a competitive price for pre-, around- and after-sales services (Konieczna, 2015, p. 101).

The subject of the research carried out among representatives of dairy cooperatives from the Świętokrzyskie and Małopolskie provinces was an indication of the activities carried out by cooperatives from among those presented above, which, in their opinion, affect the value for customers on the following markets: home voivodship, other voivodships, the EU market and other main markets. They could indicate many answers. There was used purposeful selection of the sample. Direct interviews using a questionnaire survey were conducted among representatives of cooperatives representing 41% of the population, which resulted from the willingness to participate in the survey.

3. Results

The results of the carried out research on the identification of activities affecting the value for customers carried out by dairy cooperatives from the Świętokrzyskie and Małopolskie voivodships on individual markets in the area of sales marketing are presented in Table 1.

Table 1.

Activities affecting the value for customers carried out by dairy cooperatives from the Świętokrzyskie and Małopolskie provinces on individual markets in the area of sales marketing (in %)

| Activity | Home voivodship* | | Other voivodships* | | the EU market* | | Other main markets* | |
|---|------------------|----|--------------------|----|----------------|---|---------------------|---|
| | Ś | M | Ś | M | Ś | M | Ś | M |
| Offering price-competitive products | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |
| Application of promotional prices | 33 | 25 | 33 | 25 | 0 | 0 | 0 | 0 |
| Targeting advertisement to end users | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 |
| Use of loyalty programs | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 |
| The use of consumer promotion (e.g. samples, coupons, contests, lotteries, gifts, etc.) | 0 | 25 | 0 | 25 | 0 | 0 | 0 | 0 |
| Use of public relations | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 |
| Use of publicity | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wide sharing of information about the offer | 67 | 0 | 33 | 0 | 0 | 0 | 0 | 0 |

Cont. table 1.

| | | | | | | | | |
|---|----|----|----|----|----|---|---|---|
| Offering products with a competitive warranty scope | 33 | 50 | 33 | 25 | 0 | 0 | 0 | 0 |
| Individualizing the offer | 67 | 25 | 33 | 0 | 0 | 0 | 0 | 0 |
| Offering products on favorable terms of payment / financing | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 |
| Applying special conditions of sale (discounts) | 33 | 0 | 33 | 0 | 0 | 0 | 0 | 0 |
| Offering products with a rich set of pre-, around- and after-sales services | 0 | 50 | 0 | 25 | 0 | 0 | 0 | 0 |
| offering a competitive price for pre-, around- and after-sales services | 33 | 25 | 0 | 0 | 0 | 0 | 0 | 0 |

* Multiple responses.

Ś – Świętokrzyskie Voivodship, M – Małopolskie Voivodship

Source: own study based on the results of research and (Konieczna, 2016, p. 266).

When analyzing the table 1 it can be seen that:

- The activity of offering price-competitive products is not implemented by dairy cooperatives from the Świętokrzyskie Voivodship, and in the case of the Małopolskie Voivodship, it is implemented by 25% of cooperatives only in the territory of the home voivodship.
- The activity of applying promotional prices is carried out by 33% of dairy cooperatives from the Świętokrzyskie Voivodship and 25% of cooperatives from the Małopolskie Voivodship in the mother voivodship and other voivodships territories. In other markets, this activity is not implemented.
- The activity of targeting advertisement to end users is not carried out by dairy cooperatives from the Małopolskie Voivodship on any market, and in the case of the Świętokrzyskie Voivodship, it is carried out by 67% of cooperatives only in other voivodships territory.
- The activity of applying loyalty programs is not carried out by dairy cooperatives from the Małopolska Voivodship on any market, and in the case of the Świętokrzyskie Voivodship, it is implemented by 33% of cooperatives only in other voivodships territory.
- The activity consisting in the application of consumer promotion (e.g. samples, coupons, contests, lotteries, gifts, etc.) is not carried out by dairy cooperatives from the Świętokrzyskie Voivodship, and in the case of the Małopolskie Voivodship, it is carried out by 25% of cooperatives only in the home voivodship and other voivodships territories.
- Activities involving the use of public relations and offering products on favorable terms of payment/financing are not implemented by the dairy cooperatives from Małopolskie Voivodship on any market, and in the case of Świętokrzyskie Voivodship are carried out by only 33% of cooperatives in the EU markets.

- The activity consisting in the use of publicity is not carried out by dairy cooperatives from the Małopolska Voivodship on any market, and in the case of the Świętokrzyskie Voivodship, it is carried out by 33% of cooperatives only in the home voivodship market.
- The activity of wide sharing of information about the offer is not carried out by dairy cooperatives from the Małopolskie Voivodship, and in the case of the Świętokrzyskie Voivodship, it is implemented only by 67% of cooperatives on the home voivodship market and by 33% of cooperatives in other voivodships. In other markets, this activity is not implemented.
- The activity consisting in offering products with a competitive warranty scope is carried out by 33% of dairy cooperatives from the Świętokrzyskie Voivodship and 50% of cooperatives from the Małopolskie Voivodship in the home voivodship market, and is carried out by 33% of dairy cooperatives from the Świętokrzyskie Voivodship and 25% of cooperatives from the Małopolskie Voivodship in the territory of other voivodships. In other markets, this activity is not implemented.
- The activity of individualizing the offer is carried out by 67% of dairy cooperatives from the Świętokrzyskie Voivodship and 25% of cooperatives from the Małopolskie Voivodship in the home voivodship market, and is carried out by 33% of dairy cooperatives from the Świętokrzyskie Voivodship in other voivodships territory. In other markets, this activity is not implemented.
- The activity of applying special conditions of sale (discounts) is not implemented by dairy cooperatives from the Małopolskie Voivodship, and in the case of the Świętokrzyskie Voivodship, it is implemented by 33% of the cooperatives only in the home voivodship and other voivodships markets.
- The activity of offering products with a rich set of pre-, around-sales and after-sales services is not carried out by dairy cooperatives from the Świętokrzyskie Voivodship, and in the case of the Małopolskie Voivodship, it is implemented only by 50% of cooperatives in the home voivodship and by 25% of cooperatives in other voivodships markets. In other markets, this activity is not implemented.
- The activity of offering a competitive price for pre-, around-sales and after-sales services is carried out by 33% of dairy cooperatives from the Świętokrzyskie Voivodship and 25% of cooperatives from the Małopolskie Voivodship in the home voivodship market. In other markets, this activity is not implemented.

Table 1 also shows that:

- In the home voivodship market, cooperatives from both analyzed voivodships use promotional prices, offer products with a competitive warranty scope, individualize the offer, offer competitive prices for pre-, around-sales and after-sales services. In addition, cooperatives from the Świętokrzyskie Voivodship use publicity, special conditions of

sale (discounts), and cooperatives from the Małopolska Voivodship use consumer promotion (e.g. samples, coupons, contests, lotteries, gifts, etc.) and offer price-competitive products and products with a rich set of services. pre-, around- and after-sales.

- On other voivodships markets, cooperatives from both voivodships apply promotional prices and offer products with a competitive warranty scope. In addition, cooperatives from the Świętokrzyskie Voivodship target advertising to end recipients, apply loyalty programs, widely share information about their offer, individualize the offer and apply special conditions of sale (discounts). On the other hand, cooperatives from the Małopolskie Voivodship use consumer promotion (e.g. samples, coupons, contests, lotteries, gifts, etc.) and offer competitively priced products and products with a rich set of pre-, around-sales and after-sales services.
- In the EU markets, only cooperatives from the Świętokrzyskie Voivodship use public relations and offer products on favorable terms of payment/financing. On the other hand, cooperatives from the Małopolskie Voivodship do not carry out any activities on this market.
- On other markets, no activities are carried out by cooperatives from both voivodships.

4. Conclusions

Taking into account the results of the research, it should be stated that, although activities related to sales marketing affect the value for the customer, most of them are not carried out by cooperatives. Moreover, among cooperatives that carry out any activities, two markets prevail, namely the area of the home voivodship and other voivodships, and in the case of other major markets, no action is implemented. In most cases, the voivodship in which the cooperatives operate differentiates the actions taken. Only in the case of applying promotional prices and offering products with a competitive scope of guarantees, activities are carried out in the home voivodship and other voivodships by cooperatives from both voivodships. In the territory of the mother voivodship, some cooperatives from the Świętokrzyskie and Małopolskie voivodships carry out 7 out of 14 activities related to sales marketing, with 71% of these activities differing between voivodships. In other voivodships markets, some cooperatives from the Świętokrzyskie Voivodship implement 7 out of 14 activities, while some cooperatives from the Małopolskie Voivodship implement only 2 out of 14 activities in the field of sales marketing, one of which is the same as in the case of dairy cooperatives from the Świętokrzyskie Voivodship. On the EU markets, only cooperatives from the Świętokrzyskie Voivodship carry out activities in this field, however, these are only 2 activities.

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MANAGERS' SLEEP DEFICIT AND STRESS-COPING STRATEGIES IN CONTEMPORARY ORGANISATIONS – EMPIRICAL ANALYSIS

Magdalena KRACZLA

Akademia Wyższej Szkoły Biznesu, Dąbrowa Górnicza, magda.kraczla@wp.pl; ORCID: 0000-0002-9382-4249

Purpose: This article seeks to establish whether there is a relationship between the amount of sleep managers have per night and their behaviour when in stressful situations, with particular reference to their choice of coping strategy.

Design/methodology/approach: In order to establish the relationship between managers' sleep duration and their preferred styles of coping with stress, two specific research tools were employed: a Polish adaptation of the Coping Inventory for Stressful Situations (CISS) and the author's own questionnaire assessing respondents' daily hours of sleep.

Findings: The research showed that as a variable, sleep deficit is not sufficient to explain the behaviour of managers in situations of emotional stress. However, when treated as an independent variable, sleep duration can be used to identify certain interesting behavioural aspects of managers in their professional environment.

Research limitations/implications: It is advisable to extend the research to include a larger research group and to distinguish other variables specific to the functioning of people in managerial positions.

Practical implications: The lack of any correlation between the extent of sleep deprivation and behaviours aimed at reducing stress may indicate that these behaviours stem more from specific individual factors (e.g. gender or age) and environmental conditions rather than sleep duration. Identifying these conditions and understanding how they can be modified may help to shape the well-being of managers and their employees.

Social implications: If organisations factored sleep duration into their work/health equation, this would help direct their efforts towards ensuring the well-being of their managers, which would lead to increased efficiency and performance.

Originality/value: Sleep duration does not appear to be a variable that sufficiently explains the coping strategies employed by managers, as these are more influenced by age and gender, for example. The research showed that the group of managers analysed here did not meet the recommended standards of eight hours sleep a day, with sleep duration being heavily dependent on the respondents' age.

Keywords: manager, stress, stress-coping strategies, sleep, sleep deficit.

Category of the paper: research paper.

1. Introduction

Contemporary corporate cultures that glorify managers who devote more than one hundred hours a week to their professional work are of interest to scientists and researchers who seek to determine how effectively managers function in stressful organisational situations when combined with significant daily sleep deficiency.

According to the literature on the subject, when experienced over a period of time, the effects of sleep deficiency contribute to a significant deterioration in the functioning of the body in its biological, cognitive, emotional and social dimensions. As a consequence, this situation leads to a decrease in work efficiency and difficulties in coping with professional challenges (Czeisler, 2016; Ehrenberg, 2016).

This phenomenon created an opportunity for the empirical research undertaken by the author to assess the preferred styles of coping with organisational stress that are demonstrated by modern managers, determine their individual sleep index by indicating the average number of hours they sleep per day and establish the relationship between the daily amount of sleep declared by managers and the choice of their approach to stressful situations. As expected, this relationship has a direct impact on managerial effectiveness at work and leads to increased difficulties in coping with professional challenges. Therefore, it is absolutely in the best interest of modern organizations to prioritize the problem of managerial sleep deprivation and treat it as a good basis for defining suitable policies in order to counteract sleep deficit among their executives.

As shown by numerous studies, sleep deprived managers still try their best to maintain the highest possible level of efficiency in fulfilling their role even when they face an increasing number of stressful situations every day. The aim of this article is to reveal the relationship between the sleep deprivation experienced by people in managerial positions and the activities they undertake to cope with stress. This relationship may determine how a particular manager's work style is influenced by the amount of sleep they get per day.

2. Managerial stress and coping strategies

In contemporary organizations, managerial roles are performed in highly stress-inducing conditions, and therefore an ability to cope with stress effectively is one of the most valued competences of a modern manager (Kraczla, 2016). Currently, managerial positions belong to a group of workplace positions that are regularly exposed to extensive mental strain, which generates a high level of emotional tension related to the presence of a wide range of stress factors (Cenin, 1994). For this reason, in terms of coping with emotions triggered by numerous

stressful situations, the competence of managers is of vital importance and cannot be overestimated. Managerial roles are pivotal when analysing the question of stress in any organisation. As indicated in literature on the subject, the managerial profession is associated with what is known as bipartite agency, meaning that the **responsibility that they take for their subordinates is one of the crucial areas generating the greatest stress** (cf. Hallowell, 2011; Pochtowski, 2003; Schultz, D., and Schultz, S., 2006). For management, the theory of bipartite agency at work means that the concept of agency should be applied by a manager in two ways – both towards themselves and towards their subordinates. In practice, a person in a managerial position might seek to satisfy their own personal need for agency whilst at the same time making it possible to satisfy the sense of agency of their employees. This becomes possible when a manager actively shapes the working conditions and environment in order to allow for their own as well as other people's agency. The resulting effect of such action is the humane and empathetic treatment of their subordinates, which in turn is highly correlated with the work effectiveness of their teams (Biela, 2001). Therefore, it is important for managers to be able to cope with their own emotional burdens at the same time as supporting their employees in overcoming any concerns and threats they might experience (Penc, 2000). As emphasized by Zbiegień-Maciąg (1996), the manager's actions must be the driving force for their team. As head of an organisation's human resources, a manager must be in control of the events that occur within that organisation. To do so, they must manage information in a skilful way and efficiently coordinate people's activities in rapidly changing conditions. Lipka (2002) emphasizes the inevitable need for modern organizations to be able to act in situations of permanent uncertainty and risk. This specificity of the contemporary business environment requires managers to make sure their teams operate in a reliable manner even when they are faced with unexpected changes and threats. As argued by Davenport and Harding (2012), what really counts in modern managers is their flexibility, resistance to a huge number of stimuli, ability to calculate risk and make quick decisions based on insufficient data, and bear the consequences of the choices they make. All these activities should take place in constant cooperation with other people based on new partnership principles. The stress accompanying all these processes is not just as a result of the 'hard' aspects of achieving goals, but it is also often related to the interpersonal relationships that are involved, especially their quality and shape (Nieckarz, 2014).

The struggles that managers undertake when coping with both their own and their subordinates' stress will often influence the final outcome of their tasks and the atmosphere of cooperation and collaboration within the organization (Kraczla, 2016).

Unsurprisingly, effectiveness in dealing with situations of physiological stress and emotional tension depends on both the individual characteristics of a given person and the type and dynamics of the stressful situation itself. When describing human struggles with stress, literature frequently mentions the concept of resources. Usually, resources are defined as psychological, social and biological factors that act as 'moderators in the course of experiencing

and coping with stress' (Ogińska-Bulik, 2006). In this sense, resources include everything an individual has at their disposal in the stress management process. For example, Moos and Schaefer (1993) define resources as 'a complex set of personality, dispositional, and cognitive factors that are part of the psychological context of coping'. On the other hand, Sęk (2005) defines personal resources as 'specific functional properties of features potentially existing in a person's environment, in people themselves, and in their relationship with the environment'. The author distinguishes between internal and external resources. Internal resources are mental resources including emotional competences, cognitive and intellectual functions, temperament, and biological resources in the form of genetic determinants and one's level of immune and physiological resistance. On the other hand, external resources mean the resources of the biological and physical environment as well as socio-cultural resources.

An interesting categorization of resources is introduced by R.S. Lazarus and S. Folkman (1984) who distinguish:

- health and energy,
- positive beliefs,
- ability to solve problems,
- social abilities (after Ogińska-Bulik, 2006).

R.S. Lazarus (1999) used the term **coping resources** to emphasize the importance of one's personal properties such as health, energy resources as well as positive convictions about oneself, other people and the surrounding reality. Additionally, R.S. Lazarus and S. Folkman (1984) underlined the important impact a sense of danger has on one's ability to use personal resources in various life circumstances. The extent of the perceived threat determines the level of use of one's own personal resources. In turn, the perception of resources and their availability is determined by one's personal beliefs and values, which differentiate the behaviour of an individual in various specific circumstances.

In the subject literature, there are many different studies that have resulted in diverse classifications for the approaches and mechanisms that are used to cope with stress and stressful conditions (Łosiak, 2009).

The notion of **coping with stress** can be understood as a **process**, **strategy** and **style** (Heszen-Niejodek, 2000). The **process of coping with stress** refers to all the activities undertaken by an individual in a stressful situation. These activities often span long periods of time and are dynamic in nature as they might include different management strategies closely related to changes in the characteristics of the situation and the individual themselves. **Strategies for coping with stress** include the cognitive and behavioural activities of a given person in a stressful situation. Actions taken are often determined by such characteristics as one's gender, age, psychophysical condition, personality, and may be conditioned by the features of the stressful situation itself. The **style of coping with stress** refers to the 'individual differentiation of dispositions determining behaviour in stressful conditions' (Heszen-Niejodek, 2000). Therefore, it refers to the relatively permanent features of an individual, which

define their characteristic way of solving problems in stressful situations (Heszen-Niejodek, 2000; Wrześniewski, 2000).

Since this article presents the outcome of empirical research conducted by means of the Coping Inventory for Stressful Situations (CISS), which is a questionnaire deployed as a research tool to diagnose tendencies in coping with stress, it is worth referring to the approach developed by N.S. Endler and D.A. Parker (1990). When considering the category of **coping style**, the authors identify three coping styles (Lazarus, and Folkman, 1984):

- Task-oriented style.
- Emotion-oriented style.
- Avoidance-oriented style.

It can be noticed that the variety of activities undertaken by people functioning in situations of stress is associated with different ways of thinking, different emotionality, and different behavioural patterns (Endler, and Parker, 1990, 1994).

Awareness of one's preferences in terms of the style of coping with stress that one adopts allows each individual to recognize their inclination to take specific actions and then consider them with regard to their actual effectiveness in coping with stressful situations.

3. Managers and sleep deficit

The effectiveness of the actions taken by managers in stressful situations depends on both an individual's predispositions and the specificity of a particular stressful situation arising within their organisation.

Culturally, contemporary organisations accept and even prefer the style of working under time pressure that involves multitasking and a very fast pace for delivery of assigned tasks (Czeisler, 2006, 2016). In many corporations, managers work about one hundred hours a week with only five hours sleep a night (Czeisler, 2006, 2016). The pace of work of managers and the requirement of more than twelve hours availability in any working day have become essential criteria for assessing professional performance and the desired standards for managerial positions (Berndt, 2015).

People holding managerial positions believe that sleep limited to only 5-6 hours a night can be compensated for during the day with stimulants and short power naps that will allow their brain to be sufficiently efficient all through the day. However, many studies have shown that when people lack sleep, neither power naps nor caffeine can help maintain adequate levels of concentration, memory, logical thinking, learning, and rational decision-making. They might result in a temporary increase in cognitive and emotional performance but, nonetheless, they will not ensure the proper efficiency of the human brain – whether biological or mental (Czeisler, 2006, 2016; Dinges, 1995). According to Ch.A. Czeisler (2006, 2016), managers who

present this attitude and downplay the effects of sleep deprivation pose a serious threat to themselves, the employee teams they manage, and the entire organisation.

As demonstrated in the research carried out by Harvard Medical School's Institute of Sleep Medicine, significant sleep deficit directly affects one's work efficiency and leads to the phenomenon known as 'ineffective attendance at work'. As a consequence, it contributes to numerous losses in the functioning of the organisation and becomes a catalyst for many unfavourable social and economic phenomena (Hemp, 2005).

The world's leading authorities on sleep research, sleep biology, and human alertness, precisely describe the physiological basis for the need for sleep. They emphasise the fact that in order to improve performance at work, one must not ignore the basic aspect of human biology, namely sleep. Therefore, the problem of sleep deficiency experienced by managers should be treated with the utmost seriousness to prevent compromising how efficiently their brains operate and posing a threat to themselves and others (cf. Banks, and Dinges, 2007; Czeisler, 2006, 2016; Dinges, 1995; Hemp, 2005; Kripke et al., 2012; Walker, 2019; Winters, and Kelley, 2018).

Two-thirds of adults living in highly developed countries do not sleep 8 hours a day as recommended by the World Health Organization and the American National Sleep Foundation (Walker, 2019). Regularly sleeping less than 6 hours a day impacts in a number of ways: it weakens the immune system; more than doubles the risk of cancer; enhances the development of cardiovascular disease, Alzheimer's, diabetes or strokes; can trigger the emergence of mental disorders including depressive moods, anxiety or suicidal thoughts (cf. Ancoli-Israel et al., 2008; Chopin et al., 2011; Moraes et al., 2006; Pittman, and Karle, 2018; Walker, 2019).

It may therefore be concluded that deliberately depriving oneself of sleep brings no real benefit to anyone. Meanwhile, many managers still tend to nourish the conviction that limiting the amount of sleep they have each night will gain them more work time and increase their efficiency (Czeisler, 2016). Researchers Zimbardo and Boyd (2009), who have been dealing with the psychology of time for thirty years, demonstrate how certain aspects of the environment, such as pace of life, are so commonly accepted and disseminated that they begin to affect the thoughts, feelings and behaviours of individuals.

The aforementioned feeling of 'saving time' which some managers might experience when they shorten their sleep time may be of a very subjective nature to begin with. However, once this attitude becomes more commonplace in organisational and social environments and gives rise to a specific conviction about the relationship between managerial efficiency and limited sleep time, it can very quickly shape work and social cultures that glorify abandoning sleep (cf. Czeisler, 2016; Hemp, 2005). However, regardless of how an individual decides to invest their time by engaging in specific activities, they will always have to accept the fact that this means they will be unable to take on other activities, which are seemingly endless in nature, and 'investing one's time unreasonably involves the costs of lost opportunities' (Zimbardo, and Boyd, 2009). Therefore, it may be concluded that any choice one makes is always

associated with losing the possibility of doing something else. When referring to management, such time economy makes managerial functioning appear to be an endless set of tasks to do. Fulfilment of current tasks at short time intervals and with reduced sleep time does not in fact accelerate the implementation of managerial function in its entirety, as there are always further requirements and expectations from the organization. Meanwhile, a chronic lack of sleep destroys the psychophysical condition of a manager, affecting work efficiency and the accuracy of their decisions related to cooperation and the creation of social bonds (Czeisler, 2006; Ehrenberg, 2016; Walker, 2019).

Managers should focus on the development of programs that would optimize stress management within their organisations. It is important that these programs also take into account the policy of counteracting employee sleep deprivation, as this is one of the key factors triggering the physiology of stress in the cognitive-emotional structures of the brain (Czeisler, 2016). The essence of stress management is to prevent an excessive build-up of stress for any individual in a given environment (Pocztowski, 2003; Terelak, 2004). Importantly, good policy-making with regard to sleep hygiene is actually also an effective economic strategy (Czeisler, 2006).

It is therefore clear that poor sleep quality has a significant detrimental effect on the human brain, its cognitive functions and emotional reactions. People who experience regular sleep deficiency have difficulties with concentration as well as with the processes of remembering and then recalling remembered content; their general health deteriorates. When observing such people, excessive and violent emotional reactions are clearly visible, which are caused by 'restless' amygdala activated by a lack of sufficient sleep (Pittman, and Karle, 2018). All the major systems and organs of the human body suffer damage from constant sleep deprivation. Sleep deprivation ruins the basic biological systems of the human body in many ways and affects the cardiovascular, metabolic, reproductive and immune systems. Furthermore, many common serious health conditions such as heart disease, diabetes, obesity, cancer and premature dementia, are linked to sleep deprivation (Walker, 2019).

4. Strategies for coping with stress in the context of sleep deficit – analysis of research findings

The results presented below are from a research project carried out by the author on a group of managers from 2019-2021.

Empirical research into the relationship between sleep duration and the style of coping with stress was carried out on a group of 92 managers (i.e. people holding positions related to managing other people's work) at various management levels in various organizations. However, out of this initial group, a total of 80 people qualified for further analyses as

12 questionnaires did not meet the quality requirements – some were incomplete and on others, the responses were incorrectly marked or ambiguous.

The analysed group consisted of 40 women and 40 men. All the people participating in the study were university graduates. There were 22 people in the age group 26-35, 40 people in the age group 36-45, and 18 people in the age group 46-55. The average daily sleep duration in the group was 6.52 hours per person, with 39 people getting 5-6 hours of sleep per day and 41 people sleeping for 7-8 hours daily.

The presented research was conducted by means of two research tools. The Coping Inventory for Stressful Situations (CISS) was used to assess the strategies adopted to deal with stressful situations. The Polish version of the CISS questionnaire developed by J. Strelau, A. Jaworowska, K. Wrześniewski and P. Szczepaniak (2013) obtained psychometric parameters almost identical to those obtained by N.S. Endler and J.D.A. Parker, which proves it to be an accurate and reliable version of the questionnaire analysing stress coping strategies (Wrześniewski, 2000). However, in order to address and analyse managers' sleep deficits, the author developed her own questionnaire in order to determine the daily sleep rate of respondents.

5. Analysis of research findings

The surveyed group of managers was diversified in terms of both gender and age. In order to ascertain any possible relationship between the gender of the respondent and their daily sleep duration, the obtained data was analysed by means of a Chi-squared test. This analysis showed that there is no statistical relationship between gender and sleep duration applying the Chi-square 1.25; $p > 0.05$ and the effect of this relationship is also weak using Cramer's $V = 0.13$. As a result, it may be concluded that the daily length of sleep for men and women is similar. The results are presented in Table 1.

Table 1.
Relationship between gender and sleep duration

| Hours of sleep per day | | Gender | | Total |
|---------------------------|---------------|--------|-------|-------|
| | | men | women | |
| 5-6 h | observed | 17 | 22 | 39 |
| | % from column | 43% | 55% | 49% |
| 7-8 h | observed | 23 | 18 | 41 |
| | % from column | 57% | 45% | 51% |
| Total | observed | 40 | 40 | 80 |
| | % from column | 100% | 100% | 100% |

The obtained result, which did not indicate any significant difference between the daily sleep duration of men and women, may be considered consistent with the intuition and expectations of the author. The professional requirements associated with managerial roles, along with cultural changes with regard to people's social roles both within and outside the family all mean that, on average, women and men have a similar amount of time to sleep. This phenomenon is therefore fully understandable in the context of the professional positions held by the research participants as nowadays women in managerial positions are required to be as effective as men and follow similar behavioural patterns. To sum up the point, it seems that there is no correlation between gender and the duration of sleep per day within the group of managers being analysed.

However, the situation is different when we take into account the age of the respondents. The relationship between age and sleep duration is statistically significant. This dependency was identified by means of a Chi-squared test, which returned a result of 11.18, $p < 0.01$, thus indicating a significant relationship, although the effect of this relationship within the analysed group is rather more moderate with Cramer's $V = 0.37$. Analysis of the cross-table results showed that people aged 26-35 and 36-45 tend to sleep for a longer rather than shorter timeframe, while those aged 46-55 tend to sleep for a shorter rather than longer timeframe. The results are presented in Table 2.

Table 2.
Relationship between age and sleep duration

| Hours of sleep per day | | Age | | | Total |
|------------------------|---------------|-------|-------|-------|-------|
| | | 26-35 | 36-45 | 46-55 | |
| 5-6 h | observed | 9 | 15 | 15 | 39 |
| | % from column | 41% | 38% | 83% | 49% |
| 7-8 h | observed | 13 | 25 | 3 | 41 |
| | % from column | 59% | 63% | 17% | 51% |
| Total | observed | 22 | 40 | 18 | 80 |
| | % from column | 100% | 100% | 100% | 100% |

The obtained correlation is intuitively understandable. Young and middle-aged people have a greater need for sleep and want to get relief from their everyday efforts and the stress involved in high intensity professional and non-professional work. As numerous studies show, sleep is the best way to regenerate cognitive, emotional and behavioural abilities quickly (see Czeisler, 2006, 2016). The shorter sleeping time of managers aged 46-55 may result from a sense of loss that is more noticeable for older people and a different, more subjectively felt passage of time (cf. Zimbardo, and Boyd, 2009). It transpires that with age, people feel that time passes faster and faster and they realise that the implementation of intended goals requires greater amounts of this passing time.

For this research, the strategy for coping with stress was assessed by means of a CISS questionnaire. The table below presents the descriptive statistics of the measurements taken along with the results of the Kolmogorov-Smirnov test. The obtained results are consistent with the results of theoretical normal distribution, and are presented in Table 3.

Table 3.

Descriptive statistics of CISS measurements and normal distributions tests

| | SSZ | SSE | SSU | ACZ | PKT |
|---------------------------|------------|------------|------------|------------|------------|
| N | 80.00 | 80.00 | 80.00 | 80.00 | 80.00 |
| M | 64.35 | 40.13 | 39.15 | 16.39 | 15.40 |
| SE | 0.73 | 1.22 | 1.17 | 0.70 | 0.47 |
| 95% CI PU – lower | 62.92 | 37.73 | 36.86 | 15.02 | 14.48 |
| 95% CI PU – upper | 65.78 | 42.52 | 41.44 | 17.75 | 16.32 |
| Me | 64.00 | 40.00 | 39.00 | 16.00 | 16.00 |
| SD | 6.53 | 10.92 | 10.45 | 6.24 | 4.18 |
| Minimum | 46.00 | 17.00 | 20.00 | 8.00 | 5.00 |
| Maximum | 76.00 | 73.00 | 70.00 | 39.00 | 24.00 |
| Kolmogorov-Smirnov | 0.08 | 0.06 | 0.05 | 0.09 | 0.05 |
| p | 0.710 | 0.961 | 0.990 | 0.562 | 0.991 |

In order to verify any differences between the genders in terms of CISS measurements, a series of analyses were performed using the Student's T-test for independent samples. The analysis of the results in Table 4 below shows that women had a lower level of SSZ measurements than men and a significantly higher level of SSE, SSU, ACZ and PKT measurements than men. The strength of these differences, as determined by Cohen's *d* coefficient, indicates strong gender differences $d = [\text{min} = 0.49 - \text{max} = 0.85]$.

Table 4.

Gender differences in terms of CISS scales

| Scale | T-test | df | p | Cohen's d | Women (a) | | Men (b) | | Difference |
|------------|--------|----|-------|--------------|-----------|------|---------|-------|------------|
| | | | | | M | SD | M | SD | |
| SSZ | -2.21 | 78 | 0.030 | -0.49 | 62.77 | 6.15 | 65.92 | 6.59 | a < b |
| SSE | 3.79 | 78 | <.001 | 0.85 | 44.40 | 9.56 | 35.85 | 10.62 | a > b |
| SSU | 3.32 | 78 | 0.001 | 0.74 | 42.80 | 9.79 | 35.50 | 9.90 | a > b |
| ACZ | 2.74 | 78 | 0.008 | 0.61 | 18.23 | 6.41 | 14.55 | 5.55 | a > b |
| PKT | 2.72 | 78 | 0.008 | 0.61 | 16.63 | 4.02 | 14.18 | 4.02 | a > b |

The obtained results are consistent with the literature on the subject and the author's research. Although the similarity of the occupational function might suggest unifying tendencies, the choice of coping strategies seems to be strongly influenced by personality variables, in this case related to gender. Situational variables, common for managers and independent of gender, do not have such a significant impact on the choice of coping strategies as biological traits, which are strongly correlated with personality variables. This is an important and interesting result, especially in the context of the great pressure in modern science to interpret behaviours with particular consideration to situational variables. Without undermining their influence, this research seems to indicate the significant influence of biological factors and related personality factors (cf. Wrześniewski, 2000).

In order to verify the differences between age groups in terms of CISS measurements, a series of one-way analyses of variance for independent samples was performed. Analysis of the results presented in Tables 5 and 6 shows that age did not differentiate any of the measures obtained by means of the CISS test.

Table 5.

Differences between age groups in term of CISS scales – results of variance analysis

| Scale | F | df1 | df2 | p |
|-------|------|-----|-------|-------|
| SSZ | 0.22 | 2 | 41.59 | 0.807 |
| SSE | 0.13 | 2 | 36.75 | 0.882 |
| SSU | 0.00 | 2 | 35.4 | 0.997 |
| ACZ | 0.23 | 2 | 36.61 | 0.798 |
| PKT | 0.05 | 2 | 39.37 | 0.951 |

Table 6.

Differences between age groups in terms of CISS scales – descriptive statistics

| Scale | Age | N | M | SD |
|-------|---------|----|-------|-------|
| SSZ | 26 – 35 | 22 | 63.64 | 6.86 |
| | 36 – 45 | 40 | 64.47 | 6.77 |
| | 46 – 55 | 18 | 64.94 | 5.77 |
| SSE | 26 – 35 | 22 | 40.86 | 13.62 |
| | 36 – 45 | 40 | 39.50 | 9.56 |
| | 46 – 55 | 18 | 40.61 | 10.64 |
| SSU | 26 – 35 | 22 | 39.00 | 12.75 |
| | 36 – 45 | 40 | 39.17 | 8.85 |
| | 46 – 55 | 18 | 39.28 | 11.24 |
| ACZ | 26 – 35 | 22 | 16.95 | 7.96 |
| | 36 – 45 | 40 | 16.45 | 5.37 |
| | 46 – 55 | 18 | 15.56 | 5.93 |
| PKT | 26 – 35 | 22 | 15.50 | 3.94 |
| | 36 – 45 | 40 | 15.25 | 4.21 |
| | 46 – 55 | 18 | 15.61 | 4.62 |

To assess whether sleep duration influences the choice of dominant coping strategy as measured by means of the CISS questionnaire, a series of analyses were performed using the Student's T-test for independent samples. Analysis of the results presented in Table 7 shows that there are no significant differences between sleep duration and the adopted strategies for coping with stress.

Table 7.

Differences between sleep duration groups in terms of CISS scales

| Scale | T-test | df | P | Cohen's d | 5-6 h (a) | | 7-8 h (b) | | Difference |
|-------|--------|----|-------|-----------|-----------|-------|-----------|-------|------------|
| | | | | | M | SD | M | SD | |
| SSZ | -0.67 | 78 | 0.504 | -0.15 | 63.85 | 7.17 | 64.83 | 5.90 | a = b |
| SSE | 1.09 | 78 | 0.279 | 0.24 | 41.49 | 11.44 | 38.83 | 10.38 | a = b |
| SSU | 0.39 | 78 | 0.700 | 0.09 | 39.62 | 10.66 | 38.71 | 10.35 | a = b |
| ACZ | 0.07 | 78 | 0.947 | 0.02 | 16.44 | 6.72 | 16.34 | 5.82 | a = b |
| PKT | 0.61 | 78 | 0.545 | 0.14 | 15.69 | 3.97 | 15.12 | 4.41 | a = b |

The obtained result is extremely interesting from a cognitive point of view. It seems to indicate that length of sleep and the cognitive and emotional consequences that are associated with it are not decisive in the process of choosing a coping style. The literature on the subject suggests that the choice of stress coping style is influenced by both individual and situational factors, and the final behaviour in a stressful situation is the result of both (cf. Henszen-Niejodek, 2000). In light of the obtained results, one can formulate a thesis that environmental factors – and sleep duration is one of these – affect coping strategies in a less significant way than individual factors and related personality factors. It would also appear to be the case that strategies for coping with stress have their own grounding in solid foundations relatively independent of environmental variables.

Such an interpretation seems fully justified in the context of the professional positions held by the people who were the subjects of this research. Managers are particularly exposed to various pressures and related stresses (see Hallowell, 2011). Therefore, they must develop mechanisms to enable them to cope with such situations quickly, and in a universal way, that do not require excessive intellectual and emotional effort.

It is worth noting at this point that transferring justification of coping style choice from environmental to individual factors means that managers are freed from the need to interpret a situation anew each time and assign it a meaning dependent on the ‘here and now’, which of course is associated with a large intellectual effort, takes a lot of time and is never going to be a win-win situation for managers. The choice of strategy for coping with stress would be most optimal if it resulted from the characteristics of the situation, the individual characteristics of a given person and the state of their personal resources (cf. Ogińska-Bulik, and Jurczyński, 2008). However, for pragmatic reasons, such as managers’ lack of time or the large amount of effort that might be involved, the optimal solution is neither the most convenient nor the most frequently chosen strategy.

Therefore, it seems that the process of choosing a coping strategy has its roots in deeply embedded, perhaps even unconscious, habits and behaviour patterns associated with emerging stressful situations. The internalization of these strategies results in their relative independence from situational conditions and this seems to be the reason why some managers have their own preferences when adopting their chosen way of reacting to stress, regardless of the variable and diversified situational conditions. After all, there must be a reason why it is often said that some people (including managers) ‘always behave this way’. The findings generated by the author’s research indicate that length of sleep is a situational variable that does not significantly affect the choice of stress management strategy. It also transpires that other determinants, especially individual determinants, may play a much greater role and be of more importance.

This interpretation seems to be confirmed by the other results obtained in the study. To verify the differences between the CISS scales and particular age groups and sleep durations, analysis was performed in each of these subsets. This approach returned very interesting results for managers aged 26-35 and those who declared their daily sleep duration as 5-6 hours. Measurements carried out by means of the non-parametric Friedman test showed significant differences between the SSZ, SSE and SSU scales: Chi-Squared (2) = 8.22; p , 0.05 (only three CISS measurements were selected for the analysis because of the identical measurement unit). In order to detect specific differences between the pairs of measurements, a non-parametric Durbin-Conover post-hoc test was performed. Subsequent analysis showed that the intensity of the SSZ measurement was significantly higher than the intensity of SSE and SSU; the test statistics were $DC = 3.02$; $p < 0.01$, and $DC = 3.32$; $p < 0.01$. The analysis did not show any significant differences between the SEZ and SSU measurements. The obtained results are presented below in Table 8.

Table 8.

Differences between CISS measurements in age group 26-35, sleeping 5-6h per day

| | SSZ | SSE | SSU |
|---------------|--------------------|--------------------|--------------------|
| M | 63.78 _a | 42.89 _b | 42.33 _b |
| SE | 2.57 | 5.46 | 4.79 |
| Median | 66.00 | 39.00 | 43.00 |
| SD | 7.71 | 16.39 | 14.38 |

Note: Various subscripts in the estimates of the mean (M) indicate a significant difference with $p < 0.01$.

The obtained results seem to confirm the interpretation of managerial behaviour in stressful situations, as outlined above. Only the youngest management group demonstrate a statistically significant relationship between stress coping strategies and sleep duration. Apparently, young managers have not yet developed 'their own' universal conduct strategies. In the older age groups, the correlation between sleep duration and the coping strategies they adopt seems to disappear. This might be because they have held their managerial positions for longer and have developed their own response styles independent of variables such as sleep. These styles are highly internalized and are not sensitive to disruptions such as shorter sleep hours. Young managers do not have such permanent behaviour patterns yet. Therefore, they act in a manner dependent on managerial context, broadly understood work efficiency, and under the influence of disorders resulting from insufficient sleep; hence, the correlation between short sleep duration, young age and the choice of a task-based stress coping style. It can be assumed that, with time, they will also develop other styles of coping with stress – SSE and SSU – which, internalized, will shape their behaviour in the future regardless of the influence of situational factors such as lack of sleep.

6. Conclusions

The application of sleep duration as an independent variable in the presented research allowed the author to identify some interesting phenomena. The average daily sleep duration for the entire analysed group of managers was 6.52 hours. It may be concluded that these managers did not suffer from significant sleep deficits, but at the same time did not meet the commonly recommended daily sleep of 8 hours. Regularly sleeping less than 6 hours a day can have devastating consequences for the functioning of the human body. In line with the subject literature, the obtained results confirm that the phenomenon of lack of sleep is particularly characteristic of this professional group. It is also worth noting that the author's studies have shown that managers in the younger age groups sleep longer, on average, than managers in the older age groups. This is also an interesting conclusion that is somewhat contradictory to the reports of other authors regarding the so-called culture of boosters that glorify fast life with little sleep, as this is considered a waste of time.

The conducted research did not show any relationship between length of sleep time and the gender of managers. This result would seem to reflect the cultural changes taking place not just in contemporary companies, where the number of women in managerial positions is constantly growing, but also in families, where cultural changes mean that responsibilities are distributed more and more evenly. Of course, this issue requires further and more in-depth research.

Based on the analyses undertaken, it can be concluded that sleep time, as an independent variable used to explain the decision-making process related to adopting a specific stress coping style, finally turned out to be of little importance. There was no statistically significant association between length of sleep duration, either longer or shorter sleep time, and the way in which stress was dealt with by people holding managerial roles. These styles appear to be much more dependent on variables other than sleep length.

The apparent lack of correlation between having a good night's sleep and stress-relief behaviours seems to indicate that such behaviours stem from more persistent and established individual or environmental characteristics other than sleep duration. The fact that the length of one's daily sleep can be very changeable and some people might not even be fully aware of their own sleep patterns might explain why sleep is not really a determinant of one's choice of stress coping mechanism. As the author's research shows, stress coping style is much more related to the gender of managers: men definitely prefer a task-oriented style of coping with stress, while women prefer a more emotional and avoidant style. However, what is also interesting, from the point of view of statistics, is that age does not significantly alter a person's choice of coping style. It would seem that this might be related to the thesis outlined above that stress coping style, although undoubtedly dependent on environmental variables, is also firmly embedded in the characteristics of an individual, which remain unchanged with age.

7. Summary

The presented research attempts to draw conclusions about the relationship between sleep duration and the way that managers deal with the occupational stress they face at work.

The results of the research seem to indicate that sleep duration is not a variable that can explain the stress coping styles that are adopted by people holding managerial positions. There is no sufficient, i.e. statistically significant, relationship identified between the length of one's daily sleep and the task-, emotion- or avoidance-oriented styles for coping with stress. Therefore, it seems that it is necessary to continue searching for important factors influencing people's choice of behaviour in stressful situations. One of these factors might be gender: women cope with stress differently to men, more often using emotional and avoidance styles. However, it is also important to bear in mind the possible existence of other factors, because having knowledge of all the factors involved and how these change over time and according to circumstance, largely determines the well-being of both managers and their employees.

The phenomenon of stress and the question of how to deal with stress cannot be overestimated. It is all the more important for people in managerial positions, which are particularly stressful due to their so-called bipartite agency, i.e. responsibility for one's own behaviour and achieved results and also the behaviour and results of one's subordinates. Although literature on the subject says that the decision to choose one method for coping with stress over another results from the nature of the situation itself, the individual characteristics of a particular person and the scope of their personal resources, further and more detailed studies in this area are still needed.

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FACTORS THAT SHAPE BUSINESS MODEL: IDENTIFICATION WITH THE USE OF A STRUCTURED INTERVIEW

Konrad KRAJEWSKI

Wroclaw University of Science and Technology, Faculty of Computer Science and Management, Doctoral School; konrad.krajewski@pwr.edu.pl, ORCID: 0000-0001-7518-4228

Purpose: This paper is to present an in-depth interview as a tool for identifying factors conducive to changing a business model in start-ups. The first part of the paper deals with the issues related to defining a business model, examples of its components, as well as drivers of change. The second part of the paper presents the advantages of qualitative research in studying the problems involved in a business model and includes the author's proposal for an original structured interview form aimed at identifying drivers of change in the business model.

Design/methodology/approach: These topics are discussed based on the literature review.

Findings: A properly constructed structured interview appears to be an effective tool to collect qualitative data on the factors influencing the business model change from the management level, because the people who make decisions in an organization are the best source of information on strategy and business model.

Originality/value: This paper proposes a research tool which is a structured interview consisting of 5 sections, sample questions for each section are presented to identify the factors affecting the change of business model.

Keywords: management, business model, start-up, Business Model Canvas, structured interview.

1. Introduction

In the 21st century, technological progress and globalisation have fuelled a rash of young enterprises which, with the help of innovative solutions, technologies, or business models can effectively compete with mature international corporations. An additional stimulant to entrepreneurship is access to private and public funds. Along with the development of new technologies, numerous venture capital funds and sectoral grant programmes have been created to support entrepreneurship and diversify the risk for entrepreneurs and private investors alike.

Young entities that operate based on innovative solutions are known as start-ups. Eric Ries defines them as organisations the main goal of which is to get an insight into the market, customer needs, and the best method to commercialise a specific idea “under conditions of extreme uncertainty” (Ries, 2012). To earn money effectively in such conditions, business entities have to analyse market-derived information on an ongoing basis, assess the effectiveness of their business model, and, ultimately, introduce relevant changes to it. This process is key for start-ups that only dispose of limited capital from external sources (for example from business angels, venture capital funds, or grant-distributing institutions and state organisations). Given the multitude of factors that influence the shape of a business model, it is essential to identify them early enough so as to introduce relevant changes to the existing model in a timely manner. Unfortunately, entrepreneurs who manage start-ups are rarely conversant with the rudiments of management, even if they do possess professional know-how. For this reason, it is extremely important to assist them in the process of identifying such drivers of change. To this end, field research should be carried out among start-up founders, mentors, and members of their advisory or supervisory boards. This paper aims at presenting an in-depth interview as a tool for identifying factors that shape a business model in start-ups.

The first part of the study presents definitions of the business model and its shaping factors that can be found in the literature on the subject. The second part contains justification for choosing a structured interview as a tool for identifying factors shaping the business model, as well as the author’s original proposal for an interview form. The study ends with a summary and conclusions.

2. Definition of business model

To this date, a definition of the business model (BM) has not been standardised or specified in the literature on the subject. Empirical research proves that the beginnings of the business model as such can be traced back to the intensive development experienced by the IT industry at the turn of the 20th and 21st centuries. The growing IT industry did not limit itself to offering new solutions, products, and tools to improve the life of society and entrepreneurs alike, but also generated profits from subscription arrangements or success-based settlements with the success measured by an increase in revenues or customer base or by a reduction in costs, time or energy. In 1998, Timmers proposed a definition of business model, describing it as “an architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues” (Timmers, 1998, p. 4). There is no doubt that this is an accurate way to describe the BM; however, over the years, it has evolved into more general and universal definitions, such as: “the company idea for earning money”

(Kozłmiński, 2004, p. 123), “a blueprint for a strategy to be implemented through organisational structures, processes, and systems” (Osterwalder and Pigneur, 2013, p. 19). Increased interest of scientists in the subject of business model has resulted in the emergence of research focused on identifying factors that influence the BM. At the same time, tools have appeared on the market that enables entrepreneurs to effectively define, specify and implement a business model in their respective organisations. The most widespread and universal tool is the Business Model Canvas, developed by Alexander Osterwalder and Yves Pigneur. It is used to create a core corporate strategy and define a value proposition for a specific customer group.

Canvas (Osterwalder and Pigneur, 2013, p. 19) is a template consisting of nine building blocks describing the elements that define the process of and logic behind making money. The proposal of such a universal tool is all the more important that for young enterprises the BM is the basis for creating strategies. It is a kind of foundation for an organisation and, if properly constructed, it will enable the development of an effective and efficient strategy once the organisation becomes a mature enterprise.

The BM Canvas template is a universal tool that can be used across many industries, ranging from IT, e-commerce, agriculture, power industry, and transport, to a pharmacy, diagnostics, biotechnology, or veterinary medicine. Its additional advantage is the simplicity of implementation, which allows the project, idea, need, or technology to be validated at the seed stage of their development by people who have no business experience or management expertise whatsoever. To identify the BM for their project, idea, or organisation, the entrepreneur must answer specific questions about each of the nine components of the canvas that focus on four business areas: offering, customer, infrastructure, and financial viability. The approach by Osterwalder and Pigneur assumes the presence of 9 elements that make up a business model, namely (*cf.* Fig. 1): value propositions, customer segments, channels, customer relationships, potential and resources, activities, partners, revenues, and costs.

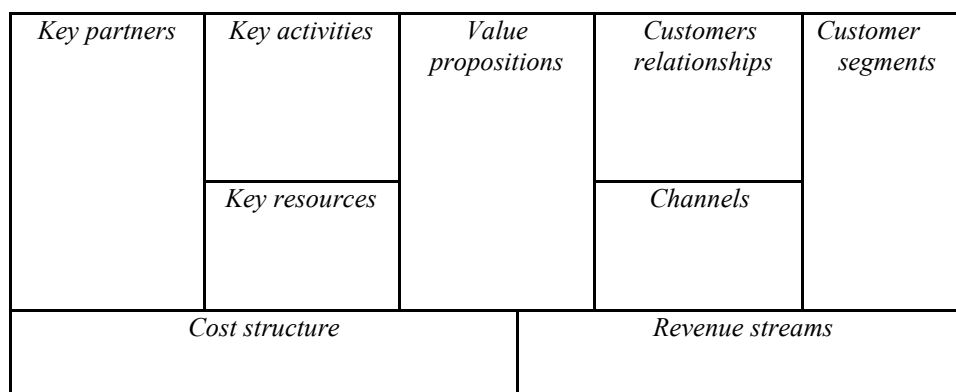


Figure 1. Business Model Canvas: nine business model building blocks. Source: Osterwalder, Pigneur, et al. 2010.

Another example of the components of a business model is a concept by Gassmann et al. (2014), which distinguishes the following dimensions:

- the “Who” – defining the customer, the target audience of the offering – this is the core of the concept;
- the “What” – defining the customer value proposition;
- the “How” – defining the processes and activities, as well as the resources and skills necessary to create and deliver the offering to the customer;
- the “Value” – answering the questions: What costs does a given activity generate? How is revenue created? How is the value proposition created?

The customer value proposition is also the basis for the concept by Mark W. Johnson, Clayton M. Christensen, and Henning Kagermann (2010) who came up with four interlocking elements making a business model, namely:

- building block 1 – customer value proposition;
- building block 2 – profit formula;
- building block 3 – key resources required to deliver the value proposition to the targeted customer;
- building block 4 – key processes, including rules, metrics, and norms that allow a profitable delivery of the customer value proposition.

It must be noted that only the most popular components of the business model have been invoked here and that all of them undoubtedly share a customer-centric approach.

3. Factors shaping business model in start-ups

A start-up organisation, due to its flat structure and early stage of development, learns intensively, collects data, and analyses information from the macro- and micro-environment to define its effective and efficient BM. Along with the development of the organisation and expansion of its organisational structures and procedures, the existing business model evolves to take the form of a strategy. Therefore, for the company's effectiveness, it is essential to define an appropriate BM as early as possible. An imprecise or incorrect business model will translate into ineffective or mistaken decisions taken based on underestimated or erroneous data. Such a BM will eventually turn into an ineffective corporate strategy, which, at best, will increase the organisation's costs while decreasing its revenues. In a pessimistic scenario, an ineffective strategy may bring losses or even force the company to close down.

As start-ups are faced with the changing environment and mature competition, they must be innovative in all areas of their activity, going beyond the business model. Indeed, a young organisation is subject to numerous influences coming from its macro- and micro-environment.

Exogenous (external) factors are economic, formal and legal, market, technological, competence-related, social, political, and competitive factors.

On the other hand, among endogenous (internal) factors we can mention:

- tangible resources (plant and equipment, capital, company assets, location);
- intangible resources (knowledge and creativity of the staff, brand, credibility, organisational culture);
- management efficiency (ability to progress);
- business arrangements and links (sources of income, relationships);
- competitiveness of products and services (creating innovative solutions, increasing key competencies);
- activities and processes within the company.

The topic of factors shaping the business model is brought up by the authors quoted above, namely Alexander Osterwalder and Yves Pigneur (2013, pp. 204-213). They have identified exogenous factors that influence the business model in terms of four areas: key trends, market forces, macroeconomic forces, and industry forces (*cf.* Fig. 2). The authors have identified these factors based on the example of the pharmaceutical industry.

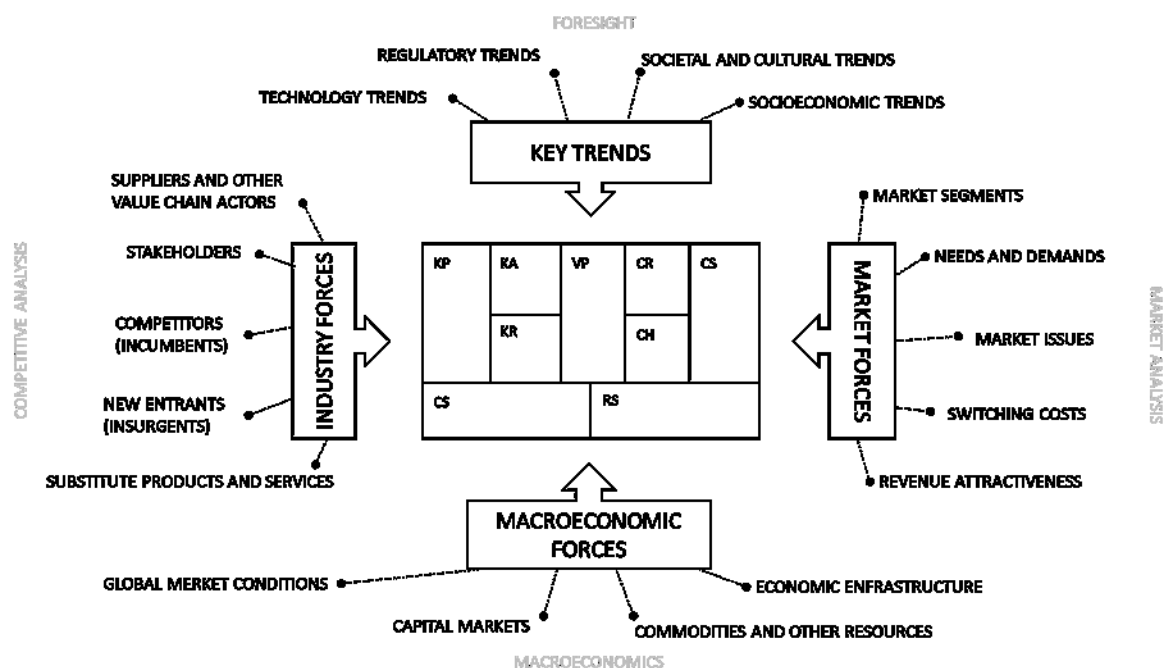


Figure 2. Exogenous factors influencing the shape of business model according to Osterwalder and Pigneur. Adapted from: „Tworzenie modeli biznesowych. Podręcznik wizjonera” by A. Osterwalder, Y. Pigneur. Copyright 2013 by Wydawnictwo Helion, Gliwice p. 205.

It turns out that in the literature on the subject we find numerous works that focus on factors shaping business model, and the factors themselves are often repeated across individual papers. When analysing the available publications, several basic factors that are drivers of change for a business model can be distinguished, such as: products and services (Afuah and Tucci, 2003; Linder and Cantrell, 2004), customer value proposition (Betz, 2002; Magretta, 2002;

Mahadevan, 2000), target customers (Chesbrough and Rosenbloom, 2002; Slawotzky et al., 1997), structure of the value chain/position of the company in the value chain (Mahadevan, 2000; Timmers, 1998), relationships with partners (Timmers, 1998), strategy and its elements (Chesbrough and Rosenbloom, 2002), resources and competences (Linder and Cantrell, 2004) and revenue sources (Afuah and Tucci, 2003).

Considering the factors listed above coupled with limited financial resources and access to information, the fact remains that start-ups are high-risk ventures. Nevertheless, they also have some specific advantages, such as the ability to make quick decisions (in the IT industry, decision-making processes take weeks, and in the biotech industry – years), continuous learning through experiments, and, last but not least, the ability to freely exploit and analyse information from the international market, ecosystem and customers. To achieve and maintain long-term competitiveness in a start-up, interdisciplinary competences and skills from founders, advisors, mentors, investors, and members of supervisory and advisory boards are a must. It is a unique configuration of skills and experience from many industries that lets a start-up develop steadily. By acquiring and analysing market data it can implement quick and effective changes in its goals, strategies, and business model itself, updating them accordingly.

4. Business model research methods

Business models as a concept are analysed by social sciences as part of qualitative research. Therefore, it is necessary to resort to methods that will bring possibly the most reliable information. Such methods include field research, the key advantage of which is a comprehensive perspective they offer to the researcher. Indeed, the first-hand contact with the analysed social phenomenon is a prerequisite for its deeper and more comprehensive understanding. Additionally, the researcher has an opportunity to delve into nuances in the attitudes and behaviours of the respondents, which are typically overlooked by those employing other methods (Babbie, 2004, pp. 309-310).

Among qualitative methods, an excellent technique for studying business models, including their drivers of change, are structured and semi-structured interviews. They are a frequent choice among researchers, which only testifies to their effectiveness. An example of their practical use is the study by Francesca Capo and her team comprising 41 semi-structured interviews to analyse four Italian companies located within the pharmaceutical district (Capo et al., 2014). The added value of their work is the extension of analyses with quantitative data obtained from secondary sources of the companies participating in the study.

Another example of qualitative research on business models is the work of Slávik and Hanák (2017), who interviewed a group of 30 service companies. Their research was to explain the relationship between business model and business strategy.

Andrej Jerman et al. (2019), in turn, asked the following questions in their structured interviews: *What obstacles do you see in your company for a transition from a traditional to the digital business model? What are the benefits of a new, digital business model? Which are critical factors that influence transitions from a traditional to a digital business model?*

Summing up, a structured interview seems to be the best method to identify factors that are a driving force for changing a business model. In this context, interviews with start-up founders (CEOs), mentors, members of advisory or supervisory boards in organisations should be conducted. Decision-makers are the best source of information for identifying the motives, reasons, and drivers for change and, most importantly, for assessing the effectiveness of the change made to the BM.

5. A structured interview proposal to identify a change in the business model

The structured interview scenario has been created based on the literature on the subject, empirical research, as well as the knowledge and experience of entrepreneurs from two start-ups operating on the markets of diagnostics and veterinary science. The scenario is divided into 5 sections:

1. Introduction to the topic.
2. Description of the organisation.
3. Description of the technology/product/service.
4. Description of the business model.
5. Impact of the market environment on the business model.

Each section has a specific purpose and duration. A single interview should last 75 minutes, but can be extended to 90 minutes.

The first section is to explain the purpose of the study, its duration, confidentiality, rules of discussion, and basic concepts while emphasizing that there are no right or wrong answers. In the introduction, it should be assumed that the respondent has little or no knowledge of business models, and thus a brief explanation is needed. Start-up founders often have an industry-specific education related to service, technology, or product offered by a start-up. For example, founders of biotech companies will typically be pharmacists, laboratory diagnosticians, or biotechnologists.

The second section of the interview has been constructed in such a way as to obtain basic information about the organisation, including the year of establishment, the number of employees, details of the founders, background, sources, and rounds of financing, experience of the founders, advisors or partners. The information obtained in this section provides an overview of the organisation, its human resources, and knowledge capacities to which it has

direct access. A sample question in section two can be as follows: *Does your organisational structure include investors, an advisory board, or an active supervisory board (what does your ownership structure look like in short)? If yes, do they back up the activities of the organisation with their knowledge?*

In the third part of the interview, the respondent provides information on the product/technology offered or developed against the market and competition. With the knowledge gained in this section, it will be possible to determine what problem is solved by the technology or product in question and what the innovative potential and the technology TRL are based on (if it has not been implemented on the market yet). A sample question in this part of the interview can be: *Why would customers opt for your product/service rather than your competitors' solution?*

The most important part of the structured interview to which the most time is devoted is part four: "Description of the business model". The section focuses on the identification of the organisation's business model, its most important elements according to the respondent, endogenous factors affecting the BM, and changes that have occurred within the business model since the organisation's start date. Based on the information thus obtained, an attempt can be made to establish the determinants of effectiveness whenever changes are introduced to the business model to achieve the company's goals. What is more, the question can be answered whether the organisation monitors and manages its business model at all. Examples of questions in this part of the interview are: *Were the changes to your business model usually: adaptive (meant to adapt to the rules prevailing in the industry) or innovative (meant to introduce innovative solutions)? Does the organisation solicit feedback from customers or other stakeholders to change its BM? Are you able to say how many times your business model has been changed over 3 years? In your opinion, were the changes radical in nature? Why was the BM changed?*

The international economic and social situation is constantly changing due to the global pandemic, throwing many industries, such as HoReCa and aviation into turmoil or even causing market collapses. Therefore, it is also necessary to identify specific exogenous factors influencing the BM, although the literature already defines external factors that have a direct and indirect impact on organisations. The interviewer should also pay attention to and try to obtain information on how the macro-and microenvironment influences the process of changing the business model given the global situation these days. The purpose of the fifth section of the interview is to identify the external factors that exert the greatest impact on changes in the BM and to determine whether the pandemic has had a positive or negative impact on the organisation and its business model. Examples of questions in this part of the interview are as follows: *Has the epidemiological situation affected your company? If yes, how? Has the epidemiological situation affected or is affecting your business model?*

It is a matter of key importance that a structured interview guides the respondents towards honest answers. The participants should delve into the details of their organisations and business models and provide a sincere reflection of situations or factors that were the rationale for changes in the BM. It should be re-emphasized that start-up founders typically have knowledge and experience in the field of exact and natural sciences, whereas social sciences are often alien to them or, at best, something that they are just getting acquainted with. Therefore, the interview process must subtly help the respondents understand the purpose of the study while guiding them towards the identification of changes that take place in their BMs. The interviewer should not make the respondents aware, directly or indirectly, that they lack knowledge of their business model, as this may discourage honesty and/or make the respondents reluctant to own up to their mistakes.

At the stage of collecting qualitative data from the executive, the interview questionnaire seems to be a perfect choice as we obtain information and data directly from the right source, bypassing lower-level employees whose knowledge may be fragmentary. On the other hand, the challenge for this type of research is the access to potential respondents and the involvement of the subjects thus recruited in the research process.

Summary

The business model is a concept widely analysed in the literature on the subject, starting from the problems related to its definition, through typology, up to change drivers. Building a business model in start-ups, which are highly innovative young entities at an early stage of development, but exposed to a considerable risk of bankruptcy at the seed stage of their organisation, is a topic that deserves attention. If a business model is defined at an early stage of the company's development, the number of mistakes in managing its operations can be limited and key management decisions – streamlined. In this context, there is no doubt that identification of drivers for changing the existing business model is necessary to timely revise any inoperative arrangements. Structured interviews allow such identification due to their qualitative nature. They offer an opportunity for a comprehensive and subjective insight into the analyzed phenomenon from the perspective of those involved in the process. The form proposed here is dedicated to start-up founders, mentors, members of the supervisory board, etc., i.e. the key people in the structure of the organisation. This research tool will be the basis for future research on business model changes. It should be remembered, however, that the results of any research based on structured interviews cannot be generalised for the population due to their subjective nature and purposeful sampling, which significantly reduces the inference process. The research tool in the form of a structured interview will be the basis for future research on identifying the factors shaping business models in enterprises.

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INVESTIGATING THE IMPACT OF CORONAVIRUS – RELATED ISOLATION ON THE QUALITY OF LIFE, INCLUDING THE QUALITY OF STUDY, OF STUDENTS AT THE SILESIAN UNIVERSITY OF TECHNOLOGY

Patrycja KWOSEK^{1*}, Sandra HAUSMANN², Viktoria BARUCHA³,
Gabriela MOCZYDŁOWSKA⁴, Grzegorz NIEKRASZ⁵

¹ Wydział Organizacji i Zarządzania, Zabrze, Katedra Zarządzania i Logistyki; patruc565@student.polsl.pl,
ORCID: 0000-0002-0326-3426

² Wydział Organizacji i Zarządzania, Zabrze, Katedra Zarządzania i Logistyki; sandhau642@student.polsl.pl

³ Wydział Organizacji i Zarządzania, Zabrze, Katedra Zarządzania i Logistyki; viktbar508@student.polsl.pl

⁴ Wydział Organizacji i Zarządzania, Zabrze, Katedra Zarządzania i Logistyki; gabrmoc937@student.polsl.pl

⁵ Wydział Organizacji i Zarządzania, Zabrze, Katedra Zarządzania i Logistyki; grzenie484@student.polsl.pl

* Correspondence author

Purpose: The aim of the article is to present the influence of isolation associated with coronavirus on the quality of life, including the quality of studying, of students of selected faculties of Silesian University of Technology.

Design/methodology/approach: The study was conducted remotely using a web-based survey questionnaire. A diagnostic survey method was used to survey students. The research topics are related to the quality of life of students, based on the current epidemiological situation and other studies conducted related to aspects of quality of life.

Findings: The study found that the epidemic had a significant impact on the functioning of students in their personal and academic lives. The study revealed that there are many problems related to the quality of life of students during the study period.

Social implications: This study will help to notice students' problems during remote learning, deterioration of interpersonal contacts and deterioration of well-being and life satisfaction, as well as a decline in the level of teaching.

Originality/value: The study indicates that distance learning is not a good form of education, and isolation at home has a negative impact on proper functioning in the modern world.

Keywords: Quality of life, pandemic, study, research, isolation.

Category of the paper: research paper.

1. Introduction

In the 21st century, a time of developing technology and pace of life, no one expected what took over the whole world in 2020. The coronavirus epidemic took everyone by surprise while changing everyone's daily life. Citizens were involuntarily ordered to limit their activities and interpersonal contacts, organization of education, work or economy. Many restrictions were imposed on the life of every citizen, which changed the daily habits and customs of every individual. All elements of daily and professional life had to be transferred to the domestic space. Everyday life for many people has strongly changed. The main area of life became one's own home. It was where everyone had to spend most of their day. Home became a kind of work, school and university. It was at home that the most necessary professional and educational activities were performed remotely. Basic activities such as shopping and entertainment were replaced by remote forms. The society felt a kind of routine connected with staying in one place and with the same people. This involved a change in the behavior of individual family members or tenants living together. This could cause discomfort, unnecessary conflict and irritability.

The idea and concept of the study on the impact of isolation on the quality of life of students was developed by the main supervisor of the project, Dr. Mariusz Ligarski, Professor of Silesian University of Technology. Research topics, analyzed articles on quality of life, the current epidemiological situation, and my own experiences inspired me to find out what students think, to create a questionnaire, and to write this article. The research problem was the isolation of the students, which resulted in a change in the way they studied. Three most important questions were posed, aiming to present the current situation in which the students of the faculties find themselves:

The questions posed were:

1. How did isolation affect the quality of daily life of students at the Silesian University of Technology during the coronavirus outbreak?
2. How did isolation affect the quality of remote studying during the coronavirus epidemic?
3. How did studying change during the SARS-CoV-2 epidemic?

The search for answers to the formulated research questions involved conducting surveys.

2. Literature study – defining quality of life

The coronavirus pandemic has recently affected students' quality of life and quality of study. According to Cz. Bywalec's definition, quality of life is: "The degree of a person's (society's) satisfaction with the totality of his or her existence" (Bywalec, 2010, p. 42). Referring to

Cz. Bywalec's definition, quality of life is the joy of enjoying life and fulfilling one's expectations and goals. Every human being achieves his/her satisfaction from the actions taken and lower and higher order needs satisfied. In the present time, lower-order needs do not play the role of necessary for survival, but have become the dominant element of a sense of security and proper functioning for a human being. The first to describe human needs was Maslow, who created a pyramid representing a hierarchy of human needs (Griffin, 2017). Those at the bottom of the pyramid during the coronavirus outbreak became the most important. For people, satisfying physiological needs and those related to their and their family's safety became a priority. Needs that are at the top of the pyramid, i.e., needs of belonging connected with friendship, recognition, respect or self-fulfillment in the time of the epidemic have been suppressed by fear and anxiety of danger for health and life. The coronavirus pandemic aroused in people a greater interest in the need for security, including stability of employment and physiological needs, i.e., adequate remuneration, possibility of rest as well as relations with loved ones. Restrictions and prohibitions are not conducive to satisfying needs of both lower and higher order. In the current situation we are dealing with an extraordinary phenomenon since the freedom achieved in the 21st century. We are dealing only with adaptation to the existing rules, where needs do not play a superior role. The definition found in the textbook of macroeconomics by E. Skawińska, K.G. Sobiech-Grabka, K.A. Nawrot from 2010 refers to sustainable development and reads as follows: "Referring to sustainable development, the essence of the quality of human life is also emphasized, which can be defined as the formation of appropriate proportions in the generation, satisfaction and ways of realization of economic, social, natural and spiritual needs of a human being with the preservation of the criterion functions of the moral sphere" (Skawińska et al., 2010, p. 132). It draws attention to the important role of the quality of human life by shaping it in various aspects and proportions, i.e. generating economic, natural, social, spiritual needs and ways of their satisfaction and realization. The criterion function of the moral sphere must be preserved here (Skawińska et al., 2010). Nevertheless, the quality of human life can be defined in two categories. The first one concerns the general quality of life, which refers to the personal, family, social and worldview spheres. The second one concerns the quality of life at work, which refers to the spheres i.e. occupational, where a person works and where a person spends his time (Zemigala, 2008). The second sphere of quality refers to work. In relation to students, studying can be considered as work because students do a specific job at the university and spend a lot of their time there. There are three layers in the hierarchy of quality of life, they are hubris, satisfaction, pleasure (Zemigala, 2008). Table 1 shows the characteristics of each of them.

Table 1.
Quality of life layers with their characteristics

| Layer | Characteristics |
|--------------|--|
| Hubris | <ul style="list-style-type: none"> ● deep ● stable ● least reactive ● appreciation of self ● ability to adapt to the environment ● sense of security ● protection from anxiety and depression |
| Satisfaction | <ul style="list-style-type: none"> ● Feelings related to emotions ● Sense of newness ● Sense of Achievement ● Forward Movement ● Commitment ● Concentration |
| Pleasure | <ul style="list-style-type: none"> ● Sensitivity to external factors ● Sense of satisfaction ● A sense of transient |

Source: Żemigala, M. (2008). *Jakość w systemie zarządzania przedsiębiorstwem*. Warszawa: Placet, p. 16.

Table 1 shows the three layers of quality of life. Hubris refers to sustained well-being and satisfaction with life, which enables a continuous positive attitude towards the world even during adverse conditions such as an epidemic. Satisfaction refers to the realization of expectations and needs that go beyond what was previously planned, but also to achieving more than was previously expected. Pleasure is a fleeting feeling that does not require concentration of the mind and also does not require engaging energy concerning human psyche (Zemigala, 2008). Hubris will help individuals to overcome the difficult situation associated with the epidemic, restrictions and limitations that have been put in place. It will allow for a better attitude towards the world around us and an improved mental state. Satisfaction will facilitate decision making in a constantly changing world. Both layers will add up to a pleasure that can be felt in focusing on specific goals and objectives rather than the restrictions and lack of freedom to which the community is subjected. All of these elements that affect the layers presented will come together to create a quality of life that is appropriate for each individual. According to the literature, there are six basic components of quality of life. Quality of life elements include:

- psychological quality of life,
- quality of somatic life,
- quality of family life,
- quality of life in the community,
- quality of functional life,
- habitat quality of life (Kolman, 1995).

3. Literature study – quality of life research

The literature that was helpful in exploring the topic of determinants of quality of life in college students was a doctoral dissertation that addresses various approaches in the study of quality of life. It pays attention to life satisfaction, sense of happiness or well-being of each individual. These aspects were helpful in creating the research questionnaire. This dissertation focused on academic youth, or the student group, which was also taken into consideration when creating the research design (Strózik, 2009). Quality of life was also examined in an article by K. Włodarczyk, which touched on various aspects and areas of life related to satisfaction with particular areas of everyday life i.e. health, professional work, future life prospects or financial situation. The survey also focused on the values that guide people and which are most important to them (Włodarczyk, 2015). Another piece of literature that was used to expand one's knowledge about quality of life was a paper on measuring quality of life at the local level. It addressed aspects of quality of life in the local area of a city, resident satisfaction, and public services (Blonski et al., 2017). Additional source material that was used to bring the topic of quality of life, however, in a national perspective, was the research developed by the Central Statistical Office of 2017 on the quality of life in Poland (CSO, 2017). In search of inspiration to diagnose the problem, English-language literature describing the psychology of quality of life was reached. It addresses topics such as psychological well-being, life satisfaction or well-being of children, adolescents and students. An important element of quality of life described in the literature, is health well-being responsible for the proper physical and mental functioning of the human body (Sirgy, 2012).

The epidemiological situation and interest in the topic of quality of life influenced the decision to conduct a study to determine the impact of pandemic-induced isolation on students' quality of life. In terms of examining quality of life during the coronavirus pandemic, studies related to daily life, work situation, behavior change, feelings, and public behavioral assessment were conducted (Drozdowski et al., 2020). During the outbreak, survey research was also conducted with Krakow students. This research was conducted by the Institute of Philosophy and Sociology of the Pedagogical University of the National Education Commission in Krakow. They concerned the situation of the threat of coronavirus pandemic. The article dealt with the subject of interest in the SARS-COV-2 pandemic, evaluation of activities carried out to prevent the development of the epidemic. It also analyzed the psychosomatic condition of students as well as life in the digital world (Długosz, 2020).

4. Methodology of the study

The study conducted by a project team of students from the Faculty of Organization and Management of the Silesian University of Technology in Zabrze was aimed at investigating the impact of isolation on students of the Silesian University of Technology. The study began in the second wave of the COVID-19 epidemic announced in Poland during the autumn-winter period. Three pre-selected faculties were studied:

- Organization and Management.
- Mechanical Engineering Technology.
- Biomedical Engineering.

This publication describes the results from a study conducted for the period March-June 2020. The study was conducted using a survey questionnaire created in Google Forms. A CAWI method was used to obtain the results quickly, direct access to the results, and an electronic form. Electronic delivery of the survey was the only way possible in the current remote study situation. The questions concerned the degree of social isolation in particular areas, discomfort due to the pandemic, social contacts (students, family, friends), changes in the way of studying (remote, stationary), motivation to study, habits formed during the epidemic, health (physical and mental), living conditions or leisure time outside the university, and restrictions on freedom and reactions to the restrictions introduced. The questionnaire was distributed in social media on groups associating students of the Silesian University of Technology. The sample that was established was 1000 questionnaires, of which 500 from the Faculty of Organization and Management and 500 from the Faculty of Biomedical Engineering and the Faculty of Mechanical Engineering and Technology. In this way, the team received 265 feedback responses of which 50.2% were received from the Department of Organization and Management, 38.9% from the Department of Mechanical Engineering Technology, and 10.9% from the Department of Biomedical Engineering. The survey allowed us to show how the students reacted to the changes related to the introduced restrictions in their environment, in important aspects of their everyday life, i.e. studies, health, free time, work, shopping, and entertainment.

5. Discussion of the collected data

In the conducted research 265 people took part. Thanks to the answers given by the respondents, a picture of the quality of life of a student of the Silesian University of Technology in the current times was formed. The respondents gave answers to all the questions posed to them. Thanks to these answers, the final results for the analysis were obtained. First, respondents were asked how the social isolation associated with the epidemic affected the quality of each area of their lives. The following areas of students' lives were considered:

- college,
- social relationships,
- health,
- psychological well-being,
- living conditions.

The spheres listed in question one are elementary parts of everyone's life. Respondents indicated that the epidemic had a negative impact in four of the five listed spheres of life. In the given question there is a predominant answer that the epidemiological situation had a negative impact in the majority of respondents, on the quality of life in the sphere of: university, social relations and psychological well-being. In the sphere defined as "living conditions", 48% of the students surveyed indicated that the epidemic did not affect their quality of life in this area. On the other hand, regarding the positive impact on students' quality of life, it varied between 8% and 21% in each part of life. With the answers obtained, it can be concluded that the epidemic, had no impact or a negative impact on the health of more than half of the students. This may be related to the lack of physical activity caused by spending most of the time in front of the computer. The negative impact on the sphere of life that is the university, may also have negative effects in the future in the education of students. The university is an important part of every student's life, so the damage to the quality of studying is a very serious downside. The negative impact also prevailed in the answers concerning the social relations zone. By the restrictions introduced, the group contact between students was reduced and the way of communication changed. Responses to the question of how the social isolation associated with the epidemic affected the different areas of the respondents' lives are shown in Figure 1.

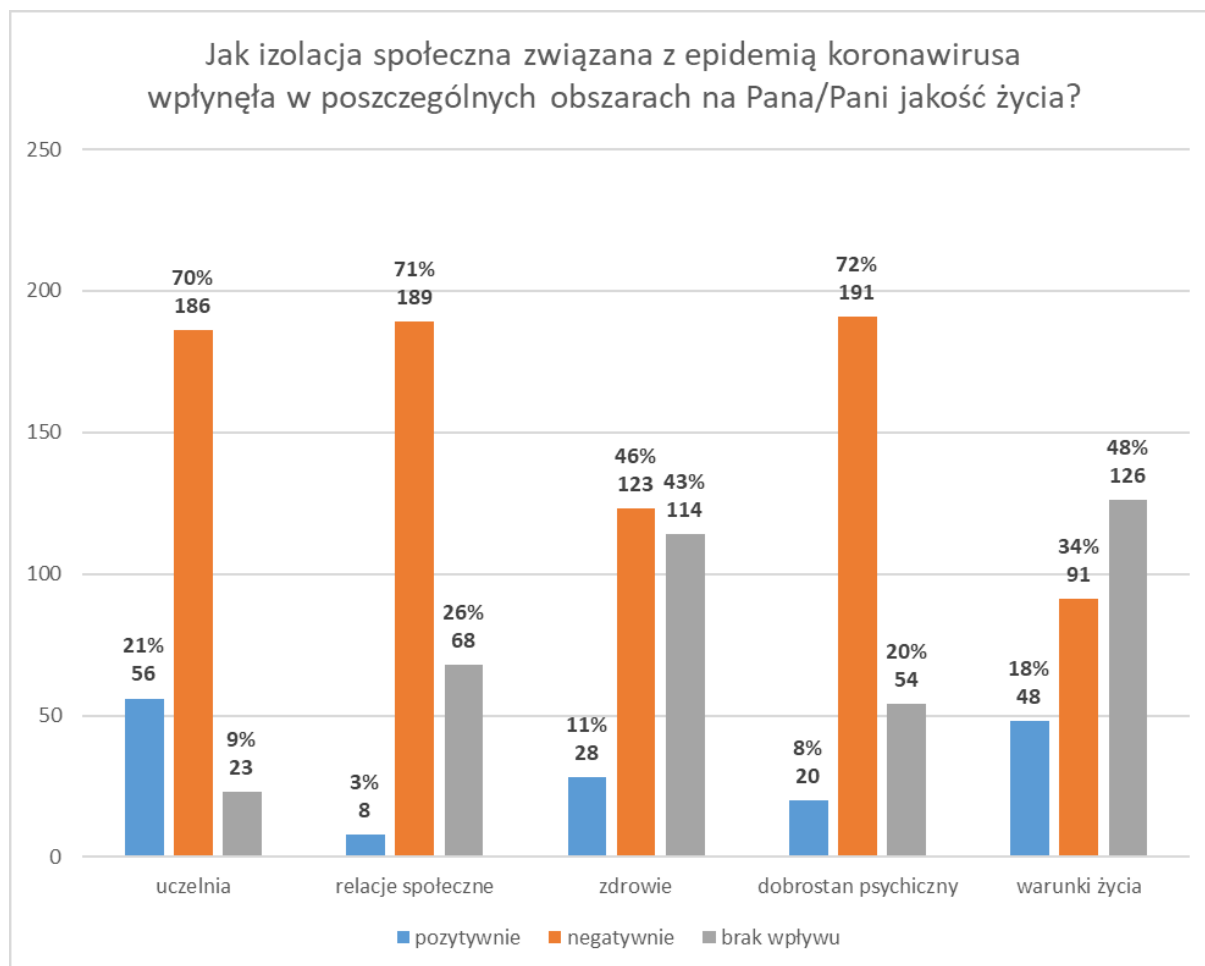


Figure 1. The influence of isolation on particular areas of life. Source: own study based on primary data.

Another topic that was addressed in the survey was the issue of contact between students. The project group asked whether the respondents felt uncomfortable about having to limit contact with other students. The responses given to this question are presented in Figure 2. From the students' responses, it was found that 75% felt uncomfortable about having to limit contact with other students. While 25% of all respondents did not feel this discomfort. Interaction with other people is a very important part of everyone's life. So far, students during breaks have had the opportunity to talk to each other touching on topics of private life, as well as topics related to university life exchanging experiences and problems. When attending the university as a full-time student, students had the opportunity to integrate and talk with the rest of the group. Due to the current situation the students stopped seeing each other and meeting each other because of the restrictions. Because of this, the contact between students began to deteriorate. Many did not socialize outside of the university. Contacts for social purposes were reduced and focused only on university related purposes. Because of this, connections within the student group diminished and narrowed to only smaller project groups. Long-term deficiency of human contact can lead to mental problems such as depression.

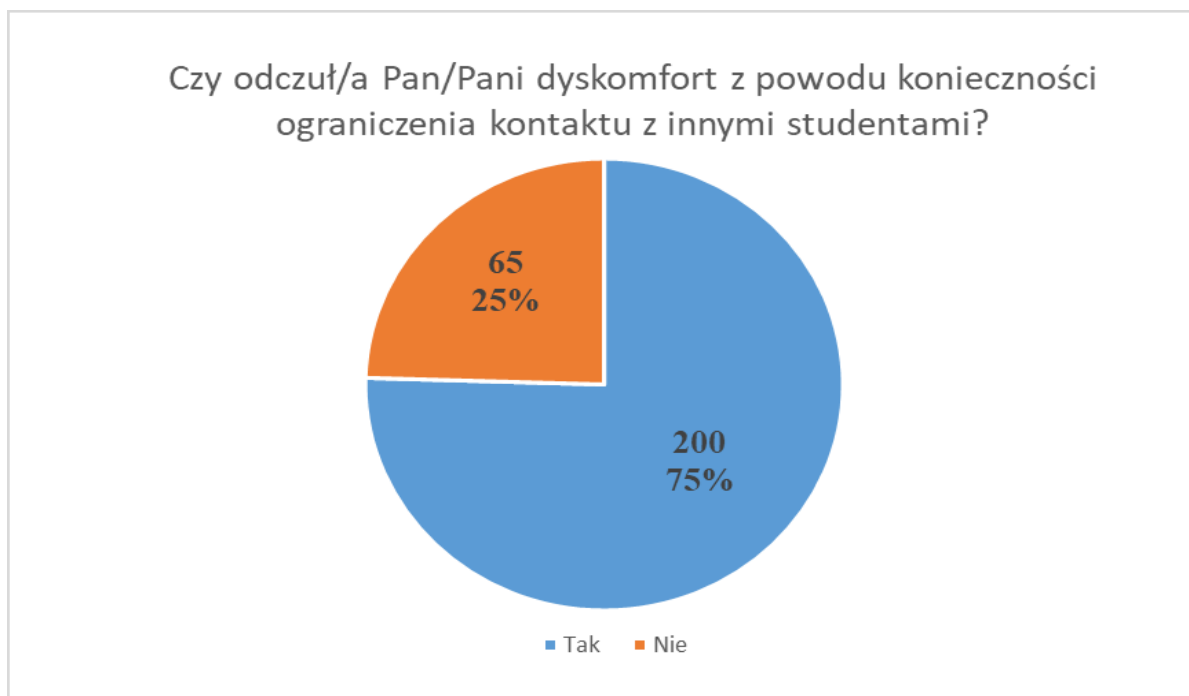


Figure 2. Discomfort with restriction. Source: own elaboration based on primary data.

For the analysis in the topic of contacts, the question of whether they have changed during the study period was also selected. The answers to this question are presented in Figure 3. From the results presented, it can be concluded that 56% of the respondents indicated that contacts with the group worsened in the social area. On the other hand, 37% indicated that contacts deteriorated in the area of collaboration in studies. Such a response indicates that the students surveyed lack contacts with others in the social area. This underscores the fact that a student's life at university does not consist solely of learning. The university plays an important role in the lives of young people as a place where they meet their future friends and strengthen ties, as well as develop interpersonal skills.

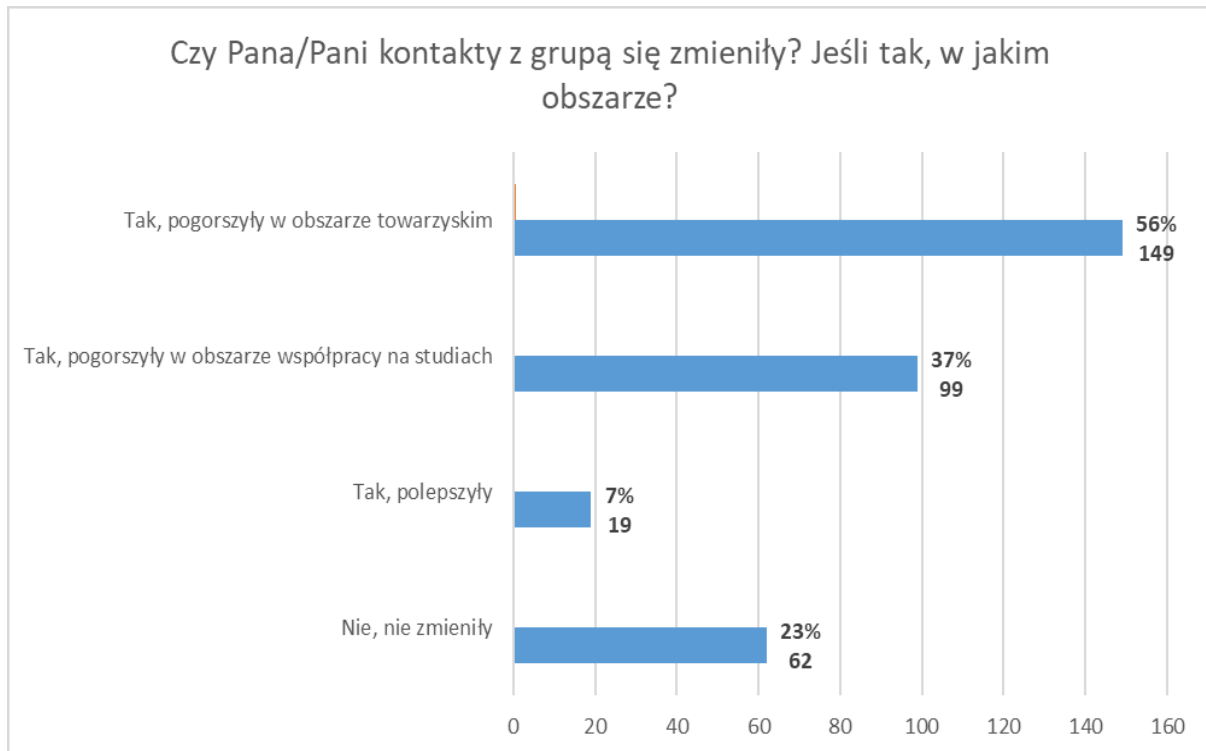


Figure 3. Contacts with the group. Source: own elaboration based on primary data.

Figure 4 and Figure 5 show the responses to the questions regarding the change in information transfer and remote contacts when transferring information. Factors that further became an issue for students during the outbreak and negatively impacted quality of life are presented. Reasons why students at 64% of the respondents felt uncomfortable with the reasons for the change in the main mode of transmission of information by lecturers include:

- Lack of information.
- Discomfort in receiving information.
- Under-information.
- Feelings of limited contact that prevented face-to-face conversations.
- Lack of care in communicating information.
- Problems in communication.

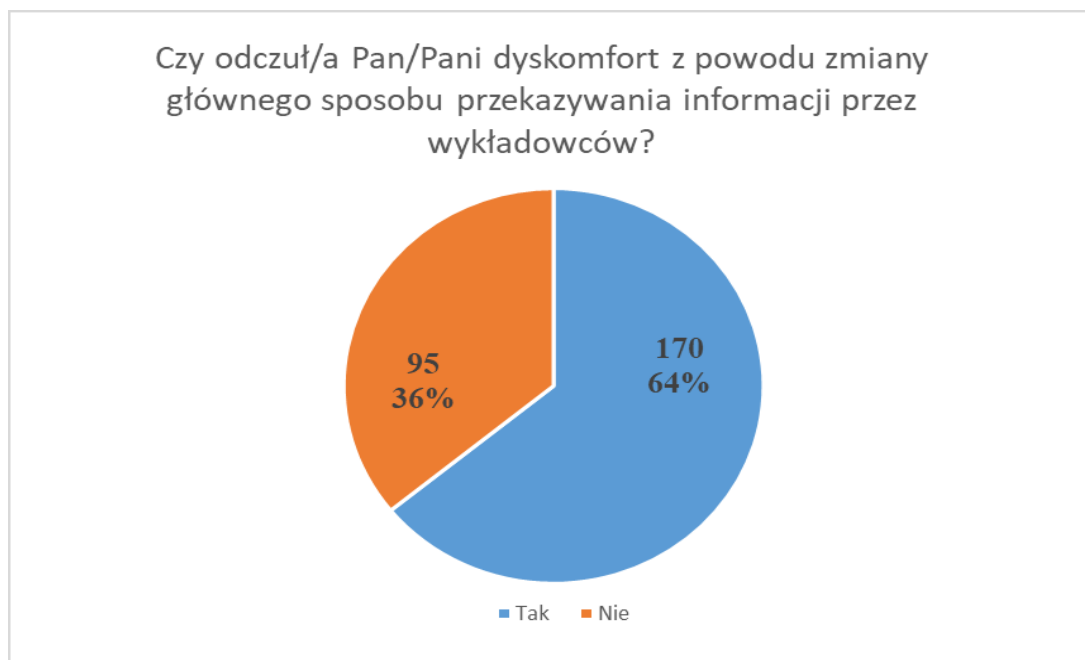


Figure 4. Discomfort with changing the way information is communicated. Source: own elaboration based on primary data.

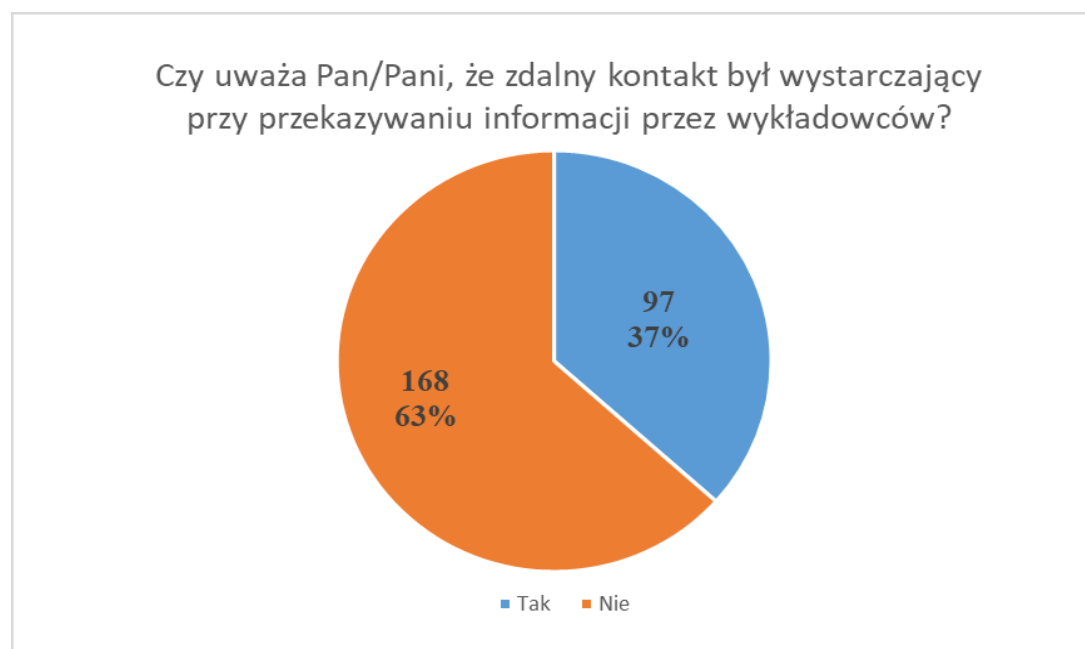


Figure 5. Remote contacts in transferring information. Source: own compilation based on primary data.

The epidemiological condition caused anxiety among the students regarding the next semesters. The results of the questionnaire are shown in Figure 6. After the first semester of distance learning, students were afraid about what the next semesters would be like. Fear is a very strong feeling that greatly affects people's quality of life, mainly their mental health.

Czy obawiał/a się Pan/Pani jak będą wyglądały kolejne semestry nauki?

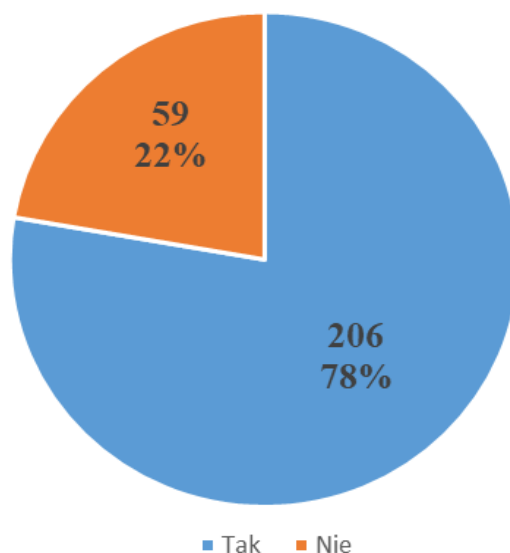


Figure 6. Concern about next semesters of study. Source: own study based on primary data.

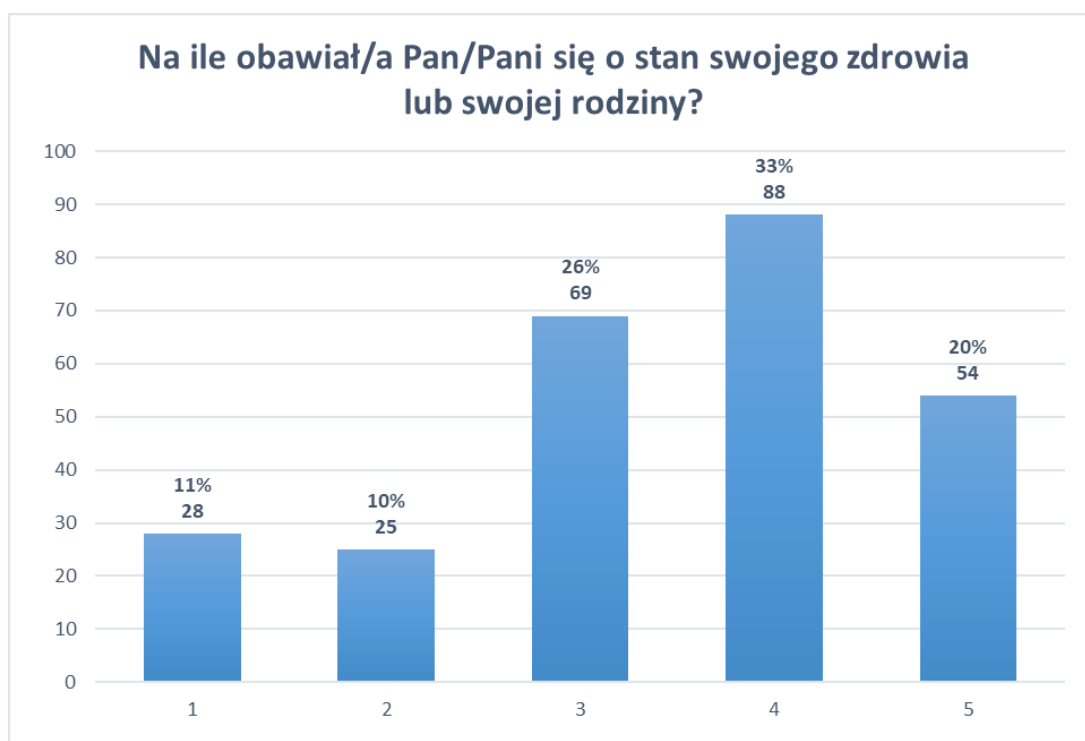


Figure 7. Concern about health. Source: own elaboration based on primary data.

Analyzing the results of the questionnaire, it can be seen that the fear of what college will be like next is not the only fear that students felt. Many of them also feared for their own and their family's health as shown in Figure 7. For the purpose of the survey, a scale was established where 1 meant very little and 5 meant very much. The results showed that 33% of those taking part in the study marked a 4 showing that they were worried about their loved ones during this period.

The study conducted analyzed the well-being and physical condition of the students. In this part of the survey, the respondents were asked to indicate the ailments they felt during the isolation. They also had the opportunity to add their own, which were not mentioned by the project group. All the answers given by the respondents are presented in Figure 8. Constant fatigue was indicated by as many as 64% of the students. It could have been caused by: a combination of homework and university duties, a lot of responsibilities at home, a lot of work for studies, a lot of news from mass media, increased hours of work at the computer. Among other complaints, 48% of the students manifested aversion to life and loneliness. These are factors that can lead to very serious mental illnesses. Due to the epidemiological situation, many people gave up their therapy with a psychologist or did not undertake it at the present time.

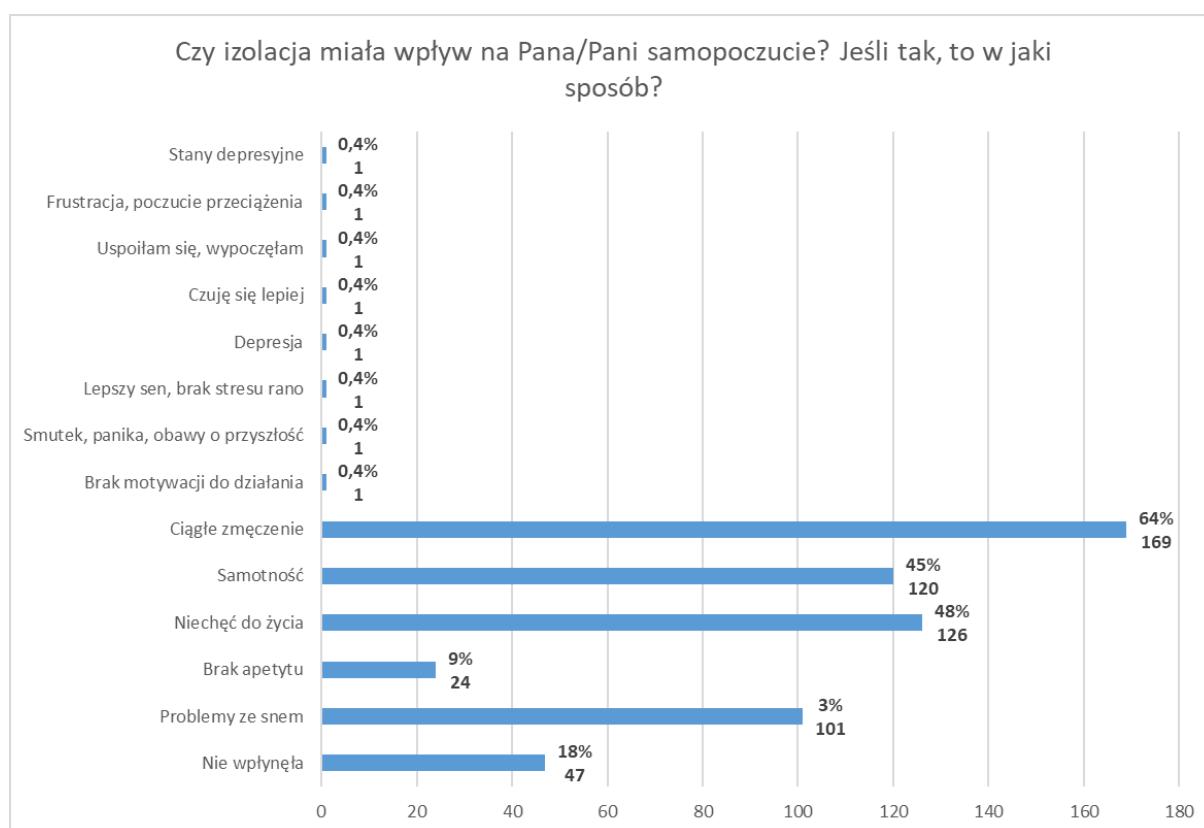


Figure 8. The impact of isolation on well-being. Source: own elaboration based on primary data.

Many have experienced physical ailments associated with studying at home that have compromised health and quality of life. The ailments mentioned are directly related to computer work. All aspects of studying have been moved to the home, and work with other students has been replaced with computer work. Due to the restriction of movement, i.e. restriction of activity caused by the necessity to go outside of the house, various health problems were created. Working long hours at a computer is not healthy for a person. Students often work in environments that are unsuitable and non-ergonomic for computer work. Unfortunately, many of these ailments may have consequences in the future (back and joint problems).

One year was enough time to form bad habits and related ailments. Information about the physical ailments experienced is shown in Figure 9.

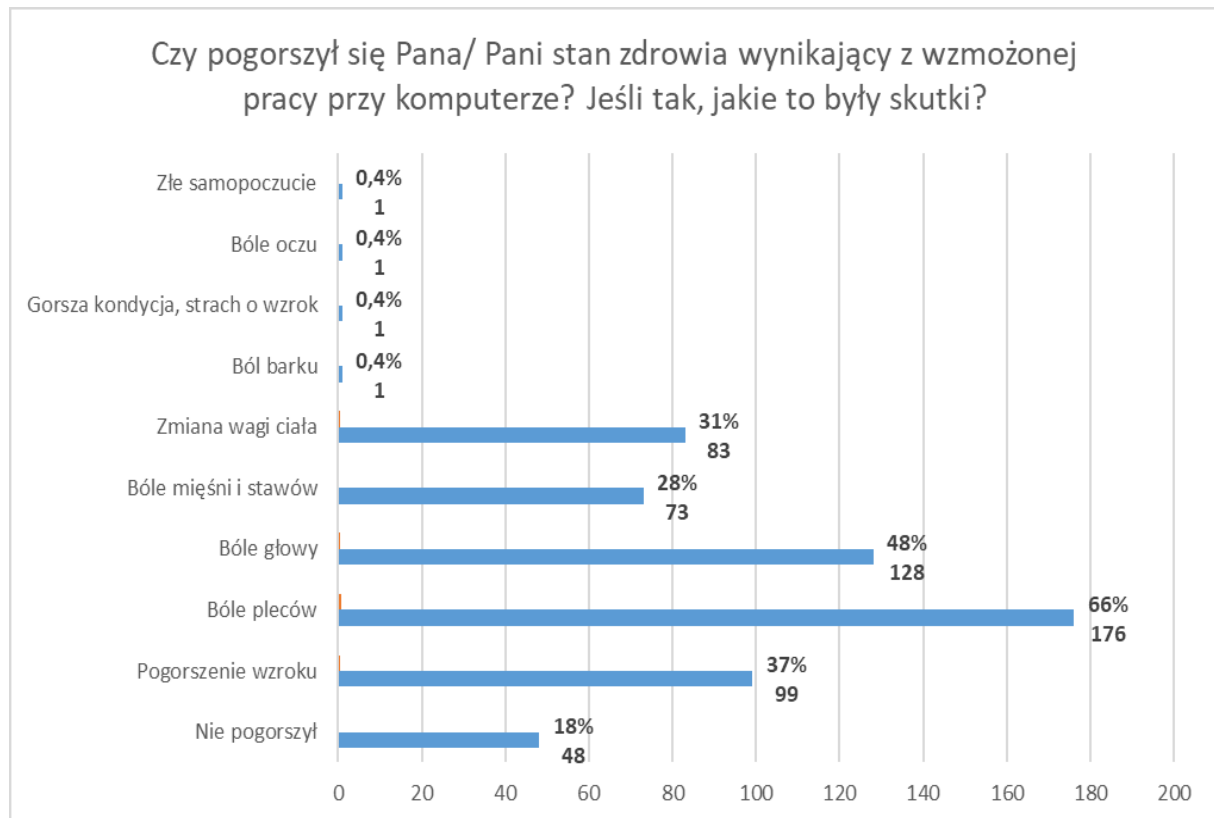


Figure 9. The impact of computer work on health. Source: own elaboration based on primary data.

6. Summary

The epidemiological situation has a very strong impact on everyone's life. The conducted research took into account the distinguished group of students, the details of studying and leisure time and the impact of the situation on the quality of life. Quality of life is a very important topic, so its areas maintained at an appropriate level contribute to the feeling of satisfaction. Quality of life is influenced by both tangible and intangible factors. This means that not everything a person needs is focused on having physical things. They are no substitute for the intangible values that contact and interaction with another person, for example, can give. The non-material and material spheres of life together form a unity and it is worth remembering to satisfy both in order to ensure the highest possible quality of life.

The current situation has had a negative impact on most spheres of the respondents' lives. In particular, it has badly affected people's social relations, their psychological well-being and the university. The university is a very important part of every student's life, so the reorganization of the way of studying has translated into a change in the perception of the

quality of life of the surveyed students. Those who conscientiously fulfill their university duties and obligations feel discomfort in receiving information. Misinformation, limited contact, lack of face-to-face conversation, and impediments to information have contributed to communication problems between students and faculty. Facilitating communication between the groups and eliminating the feeling of lack of information will reduce the current resentment and frustration of students towards studying as well as lecturers towards teaching. The resulting emotions can decrease students' motivation and commitment to their college responsibilities. Lack of organization and shortcomings in the created system for the time of remote learning, caused a lack of desire to study the studied group, which in the future may end up studying at the university earlier than planned.

The sphere of the university is not the only sphere where there have been problems recently. Social interactions have also suffered greatly. The surveyed group indicated discomfort felt due to reduced contact with other students and deterioration in social interactions. Socializing with other people is an important part of everyone's life. Lack of socialization opportunities can affect students' future lives and their interactions with other people.

Another aspect is the mental and physical health of the study group. Particularly affecting mental comfort was the perceived fear that the surveyed population indicated in a question related to further semesters of study. Many of the respondents were also worried about their job, which many students have (or about the possible lack of employment after graduation due to the current situation), as well as about the health of their loved ones.

The presented study of the research results showed that the isolation of students during the epidemic affected less e.g. in terms of living conditions, while more significantly e.g. in terms of university and social relations. The conducted research indicates the existence of many problems related to the quality of life of students during the studied period. The difficulties of the current state should not be underestimated. Both the university and the students themselves should consider how to increase the level of satisfaction with given aspects of life, which are currently perceived negatively.

The research conducted has not exhausted the topic of this article. There is still a state of pandemic in the country and the world which may prompt more research on isolation and remote studying. An interesting research related to the article could be a study showing the behavior and quality of studying in a stationary mode and its comparison with remote learning. Research could also be expanded on groups of respondents by examining lecturers and their views on remote learning. Finding out the opinions about the quality and level of students' knowledge and their interest in studying and engagement during classes.

The topic of epidemics, due to its intensity and duration, is a vexing problem of the modern world, so research in this area will be conducted and developed many more times.

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THE DETERMINANTS OF SUPERVISORY BOARD'S EFFECTIVENESS IN ENERGY SECTOR

Krystyna LISIECKA^{1*}, Bartłomiej BAK²

¹ Katowice Business University (KBU), krystyna.lisiecka@gwsh.pl, ORCID: 0000-0001-5061-5757

² Greenfield Consulting Sp. z o.o, Jawiszowice; b.bak@gfconsulting.pl

* Correspondence author

Purpose: the aim of the paper is identification and presentation of determinants of supervisory board's effectiveness in modern organization.

Design/methodology/approach: own survey studies and expert opinion interviews conducted by the author.

Findings: key necessary competences of supervisory board members in energy sector were identified, results of survey studies were confirmed by expert interviews.

Research limitations/implications: formal legal and corporate limitations of access and use of internal information affect the scope of gathered materials.

Practical implications: conducted study allows one to conclude that supervisory boards in current shape often do not guard long-term success of the company and are ill-equipped for the task at hand.

Originality/value paper identifies factors which negatively influence and limit effectiveness of supervisory board, paper highlights and specifies key competences of individual board members.

Keywords: supervisory board, corporate governance, effectiveness, expertise, energy sector.

Category of the paper: research paper.

1. Introduction

The increase in size and complexity of modern enterprises as well as the tightening of competitiveness conditions and consequent elevated expectations of stakeholders in the area of companies' economic efficiency make it increasingly difficult for supervisory boards to monitor director's activities and to stimulate cooperation towards continuous improvement of economic performance indicators. At present, the supervisory board is burdened by many tasks and their diligent execution requires its professionalisation.

Aim of the discussion on supervisory board's effectiveness is to give the answer to the question of correct assortment of legal and economic mechanisms leading to establishment of a correctly composed supervisory board and its consequential effective functioning.

This study focuses on corporate governance and its role in management in the energy sector. There search allowance focused on the effectiveness of supervisory boards and intra-corporate conditions that can contribute to the better functioning of business entities and to reducing the risk of operations. The main objective of the study was to diagnose the effectiveness of supervisory boards in the energy sector.

The result of this research intention was connected on the one hand with obtaining an assessment of the corporate governance solutions used so far in companies with state-owned participation, and on the other hand, it was to enable the modification of solutions to increase their effectiveness in the functioning of corporate supervision. Achieving this goal is also of practical value, i.e. indicating the best utilitarian solutions to improve efficiency in the management of entities forming one of the pillars of the Polish economy, which is the energy sector.

2. Research methodology

Conducting scientific research aims to solve specific problems in the sphere of cognition, theoretical or resulting from practice.

The survey method belongs to the group of empirical methods in management sciences and focuses on solving the research problem from the experience side, by capturing conditions as close to reality as possible, allowing the researcher to explore the issue under consideration from the scientific side. The test procedure consisted of the following stages (Dźwigoł, 2015, p. 102):

- construction of a research model,
- analysis of documentation,
- building a survey questionnaire,
- selection of the test sample,
- tests,
- data collection and initial verification,
- analysis and processing of data,
- presentation of research results.

In this study, the survey was treated as a research method, i.e. a specific composition and arrangement of stages of the research procedure, reproducible in the study of a specific class of problems due to its effectiveness. Its general purpose is to collect empirical material useful to solve a designated research problem (Czakoń, 2015, p. 11).

In the preparation and conduct of the research activity, which was the main axis of empirical work, the following research methods and techniques were used:

- diagnostic survey in the form of surveys, expert interviews and analysis of documents. The survey used an anonymous questionnaire, which consisted of a metric and the main part and contained closed questions. Respondents completed the questionnaire without contacting the interviewer (the questionnaire was distributed by name to the respondents in print and electronic versions). The expert interview was conducted by the researcher in the form of a conversation based on a previously prepared scenario.
- analysis of the literature on the subject (coming from both domestic and foreign resources), including specialized periodical literature in the field of corporate governance, corporate governance and supervisory boards.

The main research problem of this study can be formulated in the form of questions: What factors affect the effectiveness of supervisory boards in domestic companies in the energy sector? What professional competences of a member of the supervisory board have the greatest impact on the effectiveness of the supervisory board's work in the energy sector in Poland?

The research activity undertaken in this study consisted of several stages. The first stage was the analysis of the available domestic and foreign literature on the subject focused on contemporary management instruments in the energy sector.

Another analytical activity undertaken as part of the research was to study the legal acts in force in Poland regulating the functioning of the energy sector. These were not preceded by a study of EU regulations and other documents setting out the directions for the development of the energy sector.

The last stage of the diagnostic survey was to conduct a survey and expert interviews to identify factors affecting the effectiveness of corporate governance. The obtained result of the research activity was confronted with theoretical assumptions, which allowed to develop recommendations for improving corporate supervision activities in companies of the domestic energy sector.

The scope of the research covered the activities of supervisory boards in domestic companies in the energy sector, with particular emphasis on the effectiveness of the activities undertaken in the form of corporate supervision and the use of intra-corporate conditions.

The scope of the research activity covered three national capital groups, which together own about 75% of the electricity production market in Poland.

3. Role of a modern supervisory board

The supervisory board, as the second body of the dual management system, traditionally fulfils in the company two roles – a permanent supervisory role and a controlling role – despite the fact that the national legislator under the Code of Commercial Companies, art. 381 does not distinguish the two terms in the scope of the terminology used, even though they have slightly different meanings in field of management (Journal of Laws of 2000, No. 94, item 1037 as amended d.; Bieniak, 2017).

This twofold role of the supervisory board constitutes pair of interlinked and co-dependent functions, which at the same time effectively eliminate shareholder's rights of individual control which can be found in polish limited liability companies (Journal of Laws of 2000, No. 94, item 1037 as amended d., art. 212), replacing them with institutional supervision, leaving shareholders only inherent right to information (Opalski, 2016). At the same time members of the supervisory board are not representatives of individual shareholders and their decisions should focus primarily around interest of the company as whole which cannot be outweighed by interest of particular group of shareholders. In reality however supervisory board members all too often identify interest of the company as interest of those shareholders by which they were elected. Notwithstanding the aforementioned unchanging controlling and supervisory role, in recent years one can observe the growing importance of the supervisory board as company's separate body, the increasing complexity of its functions and the consequent growing number of challenges facing its members (Opalski, 2016).

Modern supervisory board is subjected to and has to deal with great, often excessive, amounts of information and draws attention of many stakeholder groups as a body that is seen not only in place to respond to potential crises but also to prevent them from happening in the first place. Because of that, it became today imperative to provide supervisory board with information gathering and assessment tools as well as communication tools, to secure the independence of its members, as well as its professionalism. The supervisory board has become much like the management board in these respect (Jeżak, 2012). These elevated expectations lead to visible pressure to transform the supervisory board into more of an expert body with increased involvement in the company's current affairs (Kremer, 2014). Based on the results of a 2020 study (Deloitte study, 2020) by the advisory company Deloitte Polska on supervisory boards in the face of the COVID-19 pandemic, 81% of the respondents confirmed that the supervisory board in which they sit was engaged in crisis management. Moreover, as many as 58% of them took steps within 7 days of the lockdown announcement and 23% within two weeks. However, responses show that just a little over 40% of supervisory boards have a concrete action plan in times of crisis. The difficult situation required supervisory boards to increase their collaboration with management and shareholders, as stated by more than 80% of the respondents. It is interesting that all of the respondents confirmed using of good practices

and solutions applied in different companies in other supervisory boards. The study by Deloitte Polska clearly indicates that the company's authorities have taken the new reality seriously. The pandemic affected the functioning of enterprises in strategic and operational areas, as well as required dynamic changes and strengthening relations between stakeholders from the supervisory boards (Deloitte study, 2020).

The role of the supervisory board in the functioning of the company in a crisis situation has also been accentuated in the world. It was highlighted that the supervisory board and management should work closely together in order to identify early any potential risks and opportunities that may arise as a result of the recent global financial and economic turmoil triggered by the pandemic. Coordinated collaboration between shareholders and stakeholders is of particular importance in times of crisis (Kat, and McIntosh, 2020).

Abovementioned changes in perception of the supervisory board and new expectations and needs arising from these of the board were also perceived by experts of the European Commission. According to them modern membership of the supervisory board requires ever-growing competence and far greater than before involvement, presence and accessibility of the individual members. As stated by the Commission's report that is the only way to guarantee that the increased requirements for the supervisory function are met in the long run and to ensure that each member of the board has sufficient time to effectively fulfil their supervisory responsibilities. Additionally it is stressed that the supervisory board plays a key role in the development of more widely responsible companies. Nevertheless, as practice shows, often people who perform functions in supervisory boards today still treat them just as an additional rather than main occupation, which negatively impacts the quality and effectiveness of the supervisory system as whole. Another issue highlighted by the Commission is the assessment of the board's work (European Commission, 2011).

In its recommendation on the role of non-executive or supervisory directors of listed companies, the European Commission stated amongst other things that the board should evaluate its activities annually (preferably using the services of an external entity). According to the Commission, this assessment should include competence, value and effectiveness of individual board members. Commission also names transparency of the remuneration policy for the members of the supervisory board as another issue that affects the quality of the functioning of the supervisory board (European Commission, 2011).

In conclusion Commission recommended need for changes and innovation in four areas, namely in area of 1) corporate governance rules for the supervisory boards; 2) remuneration of boards of directors and supervisory boards; 3) shareholders position in corporate governance system and 4) in the area of implementation of codes of corporate governance.

4. Organization and remuneration of the supervisory board

The procedure of appointing the supervisory board is regulated by a given organisation's memorandum of association. Selection process for the position of supervisory board member should be conducted using transparent rules that ideally eliminate or at least lower to the minimum the possibility of wrong nominations which can affect negatively board as a whole. Selection should follow closely agreed upon official qualification procedure, one in accordance with legal provisions and corporate statute and based on best available practice in the area.

The Act on the Rules of State Property Management (Journal of Laws of 2020, item 735) – chapter 3. Requirements for candidates for members of supervisory and management bodies, which came into force on 1.01.2017 and the laws implementing it, defined the new requirements to be met by candidates for the supervisory board (article 24) of companies with the participation of the State Treasury and state-owned legal entities. The members of the supervisory board of capital-linked economic entities associated with the State Treasury are required to meet several important formal criteria, e.g. not being in any legal relationship with the company. Taking into consideration the knowledge, skills, and experience, candidates must first of all have a higher education, demonstrate at least 5 years of employment as specified in the said Act and meet at least one of the additional criteria. Persons entitled to sit on supervisory boards without a special examination are: doctors of economics, legal sciences, and in accordance with the new act also doctors of technical sciences, in addition, persons having an entry in the list of legal advisers, attorneys-at-law, statutory auditors, investment advisers, and candidates holding certificates of prestigious management or financial studies listed in point 1) c)-g). Other candidates are required to have proof of sitting an examination before an examination board appointed by, inter alia the Prime Minister.

Creating such a comprehensive set of requirements clearly indicates the important role of the supervisory body in companies. However, in the current legal situation, recruitment for supervisory board members does not always take place as a result of a competition procedure. This raises speculation that the selection of a candidate to sit on the supervisory board should always be based on objective criteria equal to all applicants (Journal of Laws of 2020, item 735).

As mentioned the supervisory board is a body appointed to perform constant supervision over the way in which the company is managed (Journal of Laws of 2000, No. 94, item 1037 as amended d., art. 382 k.s.h). Dual management model of public company bodies present in Polish companies is characterized by strict personal and functional separation between two management bodies, i.e. the board of directors – management, which competence encapsulates management of the company's affairs and representation, and the supervisory board as the controlling body. Undoubtedly, the supervisory board should be independent. The selection of candidates for supervisory boards should be based solely on objective grounds.

It should be stressed that the exercise of the mandate of a member of the supervisory board (unlike a member of the board of directors) does not have a gravity of a professional role but rather has a subsidiary role next to members main professional activity. Polish law also has no restrictions in regards to the number of companies in which one person may exercise the mandate of a member of the supervisory board at the same time. However, *Good practices in public companies* of 2007 required board members to have relevant life experience, to represent a high moral level, and be able to devote the time necessary to properly perform their functions on the supervisory board (Warsaw Stock Exchange, 2007). The Best Practices of Warsaw Stock Exchange Listed Companies, published in 2021, require (pt. 2) that in their conduct and decision-making, supervisory board members should also be guided by the independence of their own opinions and judgments, which translates positively into the company's interest (Warsaw Stock Exchange, 2007, 2021). Each supervisory board member may exercise his/her supervision right independently, unless the articles of association state otherwise (Journal of Laws of 2020, item 735).

In the monistic model of corporate governance (also known as one-tier model), present in most of the Anglo-Saxon countries (prominently UK, US) as well as many roman countries (prominently France, also Spain and Switzerland), the company has one supervisory and management body, called the board of directors (USA, UK) or the administrative board. Within this council functional division of tasks occurs between the managing directors (executive), managing the day-to-day affairs of the company as its corporate officers, and non-managing directors, limited to performing control functions and participating in making strategic decisions in area of company's management (Leżak, 2010). The chairman of the (administrative) board of directors is in this model often also the head of managers and executives, bearing the name CEO (Chief Executive Officer) or, in France, PDG (President Directeur General). In a monistic model, the board of directors (administrative) can therefore – at least theoretically – participate in the process of making the most important decisions in the company and also in ex-ante control. In this model, the board may also issue binding instructions to managing directors in the form of resolutions. In practice, however, the board limits itself to the proposals put forward by these directors, and delegates its powers to them to a large extent, while meeting only from time to time. Thus directors remain the main decision-making centre in the company and exert a significant influence on the functioning of the board.

The dualistic model (also known as two-tier model) developed in Germany in the nineteenth century with supervisory board seen as equivalent of state administrative control. This model has been adopted since by polish Commercial Code of 1934, and later by 2000 Code of Commercial Companies (Journal of Laws of 2000, No. 94, item 1037 as amended d.), while choice of the monistic model is only possible in the case of a so called european company (*societas europaea*, SE) based in Poland (under EU regulation on SE). Supervisory Board consists of at least three, (in public companies – at least five) members based on article 385 § 1 of the Code of Commercial Companies (Journal of Laws of 2000, No. 94, item 1037 as

amended d.). Appointment of members of the board is normally role of the general meeting, however, the statute may grant the right to appoint and dismiss a specific number of board members. The comment of one of the Polish lawyers indicates that the three-person composition of the supervisory board in fact prevents the minority from exercising its basic right to fill the board by casting votes in separate groups. He justifies his viewpoint that a group representing as many as one third of votes at a general meeting would have the right to elect "their" member of the supervisory board. In 2003, a change was made in relation to the public traded company, restoring the requirement to appoint a board composed of at least five members (Nartowski, 2021).

Members of the supervisory board may be remunerated for their mandate, in which case remuneration is specified in the statute or resolution of the general meeting (Journal of Laws of 2020, item 1526) based on art. 392 § 1 of the Code of Commercial Companies. It is worth mentioning that the remuneration may involve right to participate in the company's profit for a given financial year, allocated for distribution among shareholders (so-called royalties). Such remuneration may, however, be adopted only by the general meeting's resolution on the allocation of annual profit. Based on the art. 392 § 1 of the Code of Commercial Companies. Supervisory board members are also always entitled to reimbursement of expenses related to participation in the work of the board (Journal of Laws of 2020, item 1526).

Remuneration level should be determined based on the function performed by a given member of the supervisory board. However, differences in the levels of remuneration should not stem from circumstances of members election such as position of the appointing body. Such practice has been subject of the first decision in which the court questioned the practice of differentiating the remuneration of members of the supervisory board of a joint-stock company in business transactions (Court of appeal 609/12, 2012).

Nevertheless thus far there has been a consensus in the literature of the subject that the remuneration of individual members of the supervisory board does not have to be set at the same level, and the privilege of persons exercising certain functions is entirely allowed. It was also widely accepted that level of remuneration depends solely on the discretion of the general meeting, and the additional remuneration may even be symbolic one polish zloty (Czajkowski, and Tofel, 2012).

Also aforementioned Good Practices did not contain specific provisions regarding remuneration, however they provided other guidelines and recommendations. And thus it was a good practice to vary the remuneration of a member of the supervisory body depending on the function performed and participation in committees, taking into account the rule that the maximum salary increase due to the function performed may not exceed 10% of the maximum amount determined in accordance with the range appropriate for given size of the company (Ministry of Treasury, 2016).

Currently however, the most important act in the area discussed is the act on the principles of determining the remuneration of persons managing certain companies of June 9, 2016 (Journal of Laws of 2016, item 1202, hereinafter referred to as: u.z.k.w.k). These new rules on remuneration of members of both the management body and the supervisory body were to remove the imperfections of earlier guidelines. The purpose of the act was to change the remuneration system, replacing it with transparent, uniform principles for determining the remuneration of members of the management and supervisory bodies, inter alia, by linking the amount of remuneration to current situation of the company. Legislator's intention, as stated in written justification of the act, was to constitute "a significant change in philosophy in determining the amount of remuneration". This is manifested in the departure from the "rigid model of binding the company with a specified limit of remuneration in favour of obligation on behalf of stakeholders to take action to shape and apply principles of remuneration adequate to corporate arrangement in a given company." Secondary indirect effect of changes was to stimulate professionalization of managerial and supervisory bodies as well as the elimination of existing undesirable compositions (Grzegorzczuk, 2017). The variable part of the remuneration of a member of the management body, constituting the supplementary remuneration for the company's financial year, is linked under art. 4 of the Act to the level of implementation of management goals. Weights assigned for management purposes, as well as objective and measurable criteria for their implementation and accounting are set for individual or all members of the management body. In the case of companies carrying out tasks in public interest, when defining management objectives, weight and criteria for their implementation takes into account the degree of public tasks implementation or the level of public tasks implementation, in the period constituting the basis for determining the supplementary remuneration.

Contained within article 4 paragraph 6 of u.z.k.w.k. catalogue of management goals is an open one and optional at the same time, which means that none of the management goals included need to be included in a particular case, and the company may freely choose other management goals – subject to article 4 paragraph 7 in case of companies that are dominant (Rzetecka-Gil, 2017).

Undeniable benefit of the new regulation is the link between remuneration and the size of the company as well as and the scale of operations, thus at least in theory with real workload and proportional responsibility, risk and scope of obligations. The division of remuneration into fixed and variable part as well as the dependence of the right to remuneration on the achievement of goals should also be evaluated positively (Gazda, and Adamus, 2017). As stated in literature proper motivational structure of remuneration system is often of fundamental importance (Merchant, and Van der Stede, 2017).

However, in authors opinion the fact that the law links some variable remuneration in some companies with the degree of implementation of a 'public mission or public task' should not be endorsed. According to the author, these public interests may not always or even often not

overlap with the interests of the company. As indicated in the literature (Merchant, and Van der Stede, 2017), "public mission or public tasks are an expression of the outlined political vision and are imposed from above", therefore the public goal may sometimes even be contrary to the interests of the company (for example takeovers by profitable companies of other companies with poor or very bad financial condition).

Regulations aimed at shaping of and limitation of remuneration of management boards and supervisory boards of companies are also present in the legal systems of other European Union countries. In some States, they take the form of applicable legal norms, and in other rigorously applied norms of codes of practice. For example in Germany, according to the Public Corporate Governance Codex, the cash remuneration of the members of the Management Board usually includes, in addition to the fixed parts, variable parts linked to annual parameters related to the company's sustainable development, long-term indicators and risk. In addition, benefits for a board member in the event of premature termination of office may not, without a valid reason, exceed the value of two annual salaries. In French legislation, the principles of remuneration for members of the management board and the supervisory board are set out in a decree of 26 July 2012, according to which the earnings of management boards and supervisory boards in entities with the participation of the state treasury may not exceed 450,000. Euro gross per year. In addition, the amount of remuneration in companies with the majority share of the state treasury is provided to the public (Grzegorzczuk, 2017).

The Best Practices of Warsaw Stock Exchange Listed Companies of 2016 did not provide such detailed guidelines connected with remuneration, however, they do indicate that the level of remuneration of supervisory board members and other key figures is important. In accordance with this document, the remuneration should therefore be adequate to the entrusted tasks and responsibilities, and sufficient to attract, retain and further motivate the staff. The current Best Practices of WSE Listed Companies of 2021 indicate as well that an element of care for the stability of the management staff is, inter alia, transparent, just, consistent, and non-discriminatory principles of its remuneration, including equal remuneration for women and men. The amount of remuneration of supervisory board members – in accordance with the Best Practice guidelines – should not be dependent on the company's short-term performance. In addition, due to the fact that the supervisory board performs its tasks on an ongoing basis, the remuneration of its members cannot be made dependent on the number of meetings held (Warsaw Stock Exchange, 2016, 2021).

In summary, it is worth emphasizing that the number of States that decide to regulate the issue of remuneration of company bodies or modify existing systems in order to find the optimal effectiveness enhancing solution is constantly growing (Grzegorzczuk, 2017).

5. Functions of the supervisory board

Main tasks of the board are unceasing control of companies management processes, choice of board of directors and shaping together with chosen board of companies strategy. Based on statutory requirements we can name the following basic functions of the board (Ježak, 2010):

1. human resources function,
2. supervisory function,
3. co-decision function,
4. communication of stakeholders interest function.

At the same time the statutory scope of supervisory powers of the board is very wide. In order to perform its tasks, the supervisory board may examine all company documents and demand from the management board and employees reports and explanations and review the company's assets. The supervisory board's specific responsibilities include assessing the annual reports prepared by the management board, i.e. the financial statements and the annual report on the company's operations, in terms of their compliance with the law and standards, as include review of the management board's conclusions regarding distribution of profit or coverage of loss (Ježak, 2010).

However, such broad scope of competence is often not visible in practice of most supervisory boards. Especially in companies with dispersed shareholding, the board is often marginalized by the management board, and in companies with a strategic shareholder – by that shareholder, who often has a direct impact on the management board. In addition, the order for permanent control is not and cannot be understood literally - the potential and nature of the council does not allow such control. Unlike the management board, which conducts the company's affairs on an ongoing basis, the board is not a permanent body, but it holds periodic meetings, at least three times a financial year. Outside the meetings, the council does not actually exist as a body. The board is thus not able to deal with specific management issues – it should rather focus on strategic management decisions (Ježak, 2010).

Because of that it is often concluded that the board should limit itself and primarily examine decisions regarding (Ježak, 2010):

1. implementation of the company's business strategy,
2. shaping of the company's internal organizational structure,
3. exercising control over the powers delegated by the management board to lower management,
4. personnel policy of the management board regarding staffing.

Another important problem which can negatively influence boards performance is supervisory board's informational dependence on the management board. Supervisory board does not have direct access to information about the company, but relies on the information that management will provide. As a result, the controlled body (management board) is the main

source of knowledge for the controlling body. This may adversely affect the quality and nature of the information provided to the board since it is in the interest of the management board to provide it with positive information and block or delay access to adverse information that could put the management board in a bad light. Because supervisory board does not get involved on a regular basis in company's management, it is also difficult for her to assess the reliability of the information provided to her. In addition, management may often see board members as outsiders and fear that they will be able to disclose confidential information about the company's enterprise (especially when representatives of minority shareholders or employees are on the board) (Jeżak, 2010).

One of the solutions to these and other problems is creation of specialized smaller groups within the council, the so-called committees, which aims to guarantee its better performance and to strengthen its position in the company. As such creation of committees was recognized as good corporate practice first in the Anglo-Saxon monistic model (USA, UK). Audit and remuneration committees are required by the US Stock Exchanges NYSE and NASDAQ (Jeżak, 2010). These committees are to counterbalance the strong position of managers (managing directors), focusing on selected aspects of supervision, in particular in those areas where conflict of interest between the company and its managers may occur. They are to prevent extreme negative situations in which managing directors, dominating over dispersed shareholding, control all processes in the company.

6. Functioning of the supervisory board during the crisis

It is extremely important that the supervisory board and the management board collaborate with each other to find optimal solutions for the organisation in the event of a crisis on the market. The board is responsible for overseeing the work of the management board and monitoring its progress. One of the biggest challenges related to corporate governance, both for the management board and the supervisory board, is the appreciation and mutual respect of obligations in times of crisis. A checklist was even created for supervisory boards to make supervision more effective. The board should guard the health and safety of the company's community and the environment, because it is the organisation's priority. It is required to review the crisis management plan and informing about any changes made in the company in connection with the pandemic, and also to make sure that the right people have been chosen to deal with the crisis. In addition, the board's task is to analyse the main risks to the organisation (e.g. related to the supply chain, money flow, and technology) and to assess and monitor management's efforts to identify them, define priorities, and manage them. The board needs to ensure that management has an effective, fair, and timely plan of communicating with, inter alia, the shareholders, employees, and customers in times of crisis (MacDougall et al., 2020).

On March 31, 2020, the Sejm (the lower house of the bicameral parliament of Poland) adopted an act which introduced the so-called the Anti-Crisis Shield, which amended, inter alia, the Code of Commercial Companies (Journal of Laws of 2020, item 735). Thus, the possibility of holding a general meeting of shareholders with the use of means of electronic communication in joint-stock companies was extended. The results of Deloitte Polska's study indicate that 93% of supervisory boards held their meetings via electronic means of communication. It was the Supervisory Board that established the bylaws defining the detailed rules for taking part in the general meeting online. Attention was drawn, however, to the threats to companies in the face of the continuing pandemic. At present, remote work often practiced by supervisory boards may result in unintentional, superficial treatment of important topics of a given company. In the new economic reality, the remote mode of operation poses the risk of adopting resolutions adopted on the spur of the moment – chiefly due to the limited possibility of discussion and exchange of views. The mode of communication forced by the circumstances cannot, however, justify unfavourable decisions in the company, especially during the economic crisis (Journal of Laws of 2020, item 526; Deloitte study, 2020; Nartowski, 2020).

7. Supervisory board's involvement

Competent supervisory board is a key determinant of effectiveness. Each member of the supervisory body should possess capability to properly fulfil supervisory duties stemming from inter alia his or her (Jeżak, 2012):

1. knowledge (possessed due to acquired education, training, obtained professional titles or degrees and acquired in other different ways during the span of professional career),
2. experience (acquired in the course of fulfilling specific functions or occupying specific positions),
3. other personal skills necessary to perform the entrusted function.

Each member of the supervisory body should guarantee the proper performance of his duties and offer range of personal qualities. These personal competences of individual members of the collegiate supervisory body should complement each other to enable adequate level of supervision over all areas of the company's operations (Jeżak, 2012).

Composition of the body should when necessary include participation of members who speak not only polish but also foreign languages and who have adequate experience and knowledge of the financial market necessary to supervise the company on the financial market. Supervisory body should be able to undertake necessary supervisory activities on an ongoing basis in particular in regards to the implementation of the adopted strategic goals or significant changes in the level of risk or materialization of significant risks in the company's operations, as well as in the area of financial reporting (Jeżak, 2012).

Also the size of the supervisory body should be adequate to the nature and scale of the company's business. The supervisory body should however always have the function of chairman who manages the work of the supervisory body. The election of the chairman of the supervisory body should be based on for experience and team management skills taking into account the criterion of independence. The composition of the supervisory body should include adequate participation of independent members, and where possible of members nominated by minority shareholders. Independence is primarily understood as lack of direct and indirect links with the company, members of the management and supervisory bodies, significant shareholders and entities related to them. In particular, members of the audit committee or members of the supervisory body who have competence in the field of accounting should be fully independent (Jeżak, 2012).

Each member of the supervisory board should perform his duties actively, demonstrating the necessary level of involvement in the work of the supervisory body as a whole. The necessary level of involvement manifests itself in devotion of time to the extent necessary to properly perform the tasks of the supervisory body. A member of the supervisory body should also refrain from undertaking professional or non-professional activity that could lead to a conflict of interest or otherwise adversely affect his reputation as a member of the supervisory board or from undertaking numerous activities which collectively would limit is potential involvement due to lack of time (Jeżak, 2012).

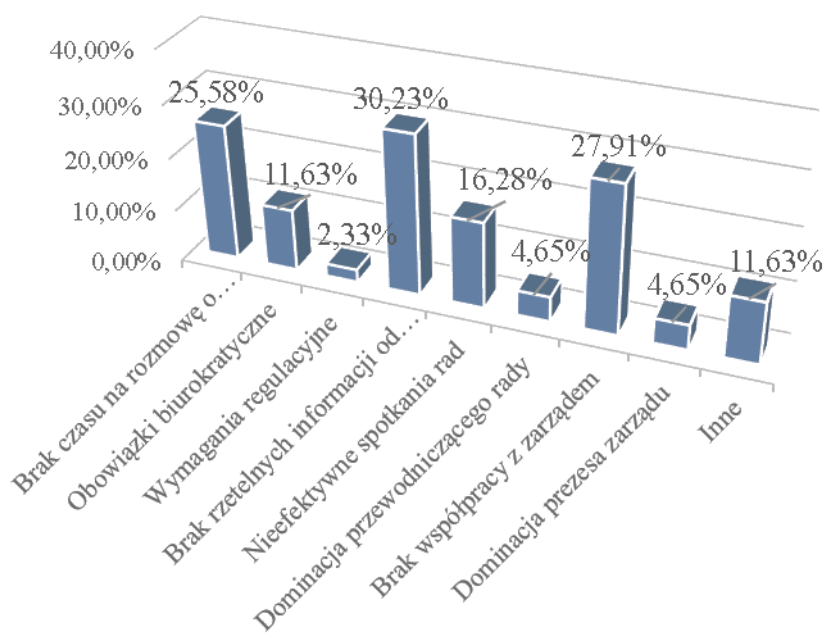
In the case of finding in the course of supervision signs of fraud, serious errors, including those having a significant impact on the content of financial reports or other serious irregularities in the functioning of the supervised institution, the supervisory body should take appropriate immediate action, in particular it should request detailed explanations from the management body and recommend effective solutions to prevent similar irregularities in the future. Supervisory board, if it is necessary for exercising proper and effective supervision, may also request from management body appointment of a selected external entity to conduct specific analyses, audit or to consult on specific matter (Jeżak, 2012).

8. An analysis of survey study results

In order to support the hypothesis that the above-mentioned factors determine the effectiveness of the supervisory board, partial results of a broader study of the effectiveness of corporate governance in the energy sector are presented in this section. Main part of the survey, directed to respondents acting as members (including the chairman) of supervisory boards of companies in the domestic energy sector, contained 15 questions (122 potential answers) referring to issues related to the functioning and assessment of the effectiveness of corporate governance and to the professional competence of individual members of supervisory boards.

Abovementioned study was confronted with expert interviews conducted in the form of a controlled conversation using the interview scenario. This method was used to obtain opinions of practitioners with established professional positions in the energy sector related to the issue of functioning of supervisory boards. In this case the so-called Delphi variant¹ was applied which involves, presenting experts representing various professional experiences with one set of questions, containing both closed and open questions. The content of the questions was closely related to the questionnaire distributed among the respondents participating in the survey. In total, the expert interview was conducted with six people employed in energy sector companies.

One of the survey questions asked respondents to indicate factors that in their opinion limit the effectiveness of supervisory board members most effectively. A detailed distribution of the answers provided is presented in the Figure 1.



Legend of the diagram:

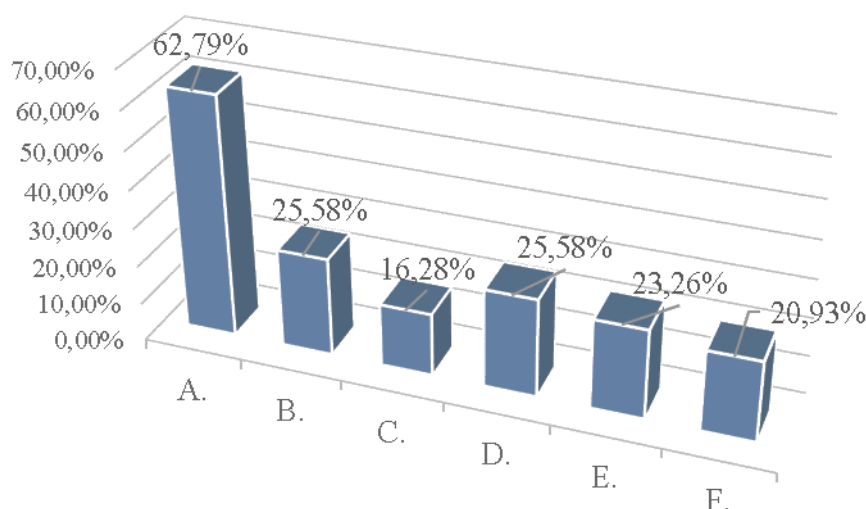
- A. Lack of time for conversation
- B. Bureaucratic responsibilities
- C. Regulatory requirements
- D. Lack of reliable information
- E. Ineffective meetings
- F. Supervisory board chairman's domination of the meetings
- G. Lack of cooperation from board of directors
- H. Board of directors chairman's domination of the meetings
- I. Other factor

Figure 1. Percentage of answers chosen as part of the survey to the question: What factors in your opinion limit the effectiveness of supervisory board members the most? Source: own study.

¹ The Delphi variant involves obtaining answers from several experts, who do not have direct contact with each other, which negates hard presentation of their own counterargumentation towards the position of other people.

By providing answers, the respondent could mark more than one answer among the nine options to choose from. As the factors limiting the effectiveness of supervisory boards in domestic energy sector companies to the greatest extent, the respondents indicated: the lack of reliable information from the board and the lack of cooperation with the board, as well as the lack of time for discussion of issues relevant to the company.

One of the next questions focused on the expected qualities of supervisory boards members of energy sector companies in Poland. Most popular answer was the one highlighting expectations of general professional competence. This answer was given by over 62% of respondents (Figure 2).



Legend of the diagram:

- A. Appropriate competences
- B. Knowledge of the legal surrounding of the company
- C. Ability to choose effective board of directors
- D. Motivational qualities towards board of directors
- E. Ability to stay within boundaries of supervisory duties
- F. Decision making capabilities

Figure 2. Percentage of answers chosen as part of the survey to the question: Choose the most expected qualities of the supervisory board and its members. Source: own study.

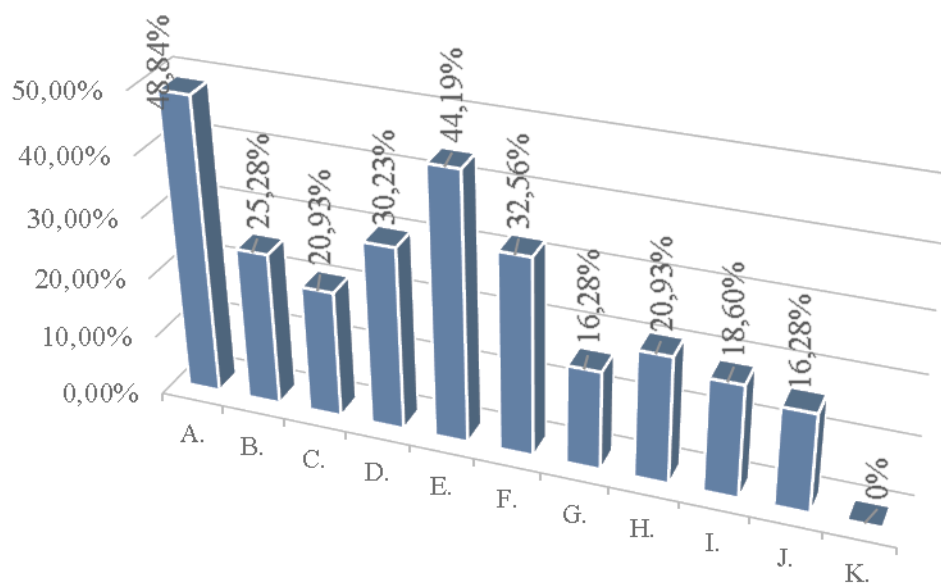
Decisively fewer votes were assigned by the respondent to the next two options, i.e. knowledge of the company's regulatory environment and motivational qualities (25.58% each).

It should be pointed out that the issue of knowledge of formal, legal and organizational realities as well as economic realities in which energy sector entities operate is currently an essential criterion for selecting candidates for supervisory boards. In the modern, competitive and basically global market of electricity suppliers there is no room for making wrong, ill-considered and devoid of long-term strategy decisions, because such action will be burdened with a high risk of recourse of a given company. Only every fourth respondent pointed out that the task of supervisory board members is to stimulate or activate members of the company's management board. The fact of holding a managerial position in a company with an established position on the market (often a leader in a given industry) is in itself a key inspiration to make

strenuous efforts for a given entity. Lastly only every fifth respondent (20.93%) indicated a preference regarding to the decision making of the supervisory board. Undoubtedly, this is due to the fact that the respondents have an established awareness on the advisory (and not managerial) role of such a body as the supervisory board.

In the third question, the respondents were asked to mark competences and individual personality traits that make up the desired supervisory board member's profile. Respondents had the option of selecting more than one answer from eleven possible options.

Professional managerial experience in the energy sector was the competence that respondents valued the most (answer selected by 48.84% of respondents) in candidates for supervisory boards in companies from the domestic energy sector. The chart in figure 3 presents a summary of the answers given to this question.



Legend of the diagram:

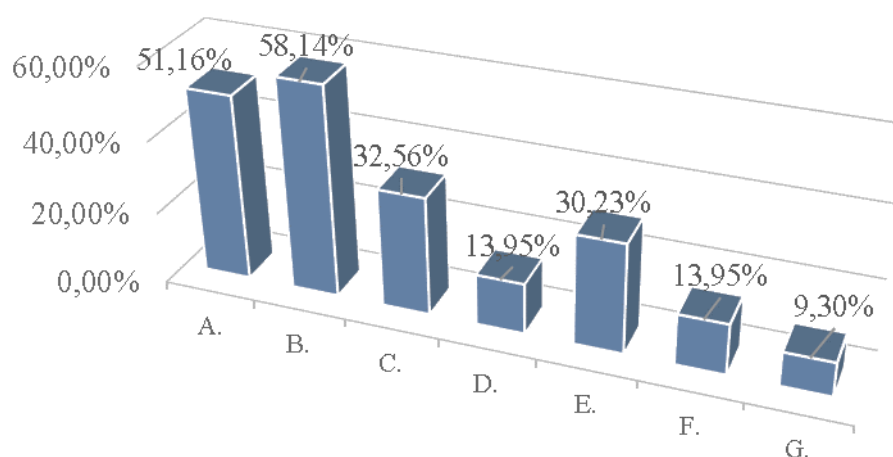
- A. Professional managerial experience in the field
- B. Knowledge of various business structures and financial models
- C. Ability to voice independent opinion
- D. Resistance to pressure of other board members when making important decisions
- E. Knowledge of the sector
- F. Ability to critically analyse information provided by the board of directors
- G. Qualifications and experience helpful in process of monitoring of risk management
- H. Understanding of owns role and duty to work in companies best interest
- I. Willingness to engage in boards work
- J. Adequate time allocation to ensure appropriate fulfilment of duties
- K. High level of professional fulfilment and the desire for further self-development

Figure 3. Percentage of answers chosen as part of the survey to the question: What are the characteristics of desired supervisory board member? Source: own study.

The second most chosen answer was knowledge of the sector in which the company operates (44.19%). This similarity with the lead response is not surprising given that it is the market (sector, industry) and its realities that set the direction for the functioning in it entities. So knowledge of the market and its processes and conditions, in which they occur, according to the respondents is the most valuable ingredient of qualifications of persons applying for the

function of a member of supervisory boards. The third most selected answer focused on the ability to assess the quality of information package received from the management board (32.56%). The ability to constructively and rapidly evaluate the information provided by management is one of the most important components of forming the desired profile of a member of the supervisory board. Undoubtedly also ability not to be influenced is an important feature of managers advising on supervisory board since also roughly three out of ten respondents (30.23%) picked this answer.

Fourth question, presented in figure 4, focused on the identification of the most important determinants of effectiveness of supervisory board. Respondents had the opportunity to select more than one option from seven possible answer options. Most votes were cast for the answer, which in essence stresses the diversity of the competences possessed by the individuals forming the board. According to the respondents, thanks to this universality of board members, it has real opportunities to supervise the company and monitor its results. In this question, the respondents also highlighted the very important skill of supervisory board members, namely the ability to ask the right questions.



Legend of the diagram:

- A. Knowledge of company's business model and of the processes taking place within it.
- B. Presence of diversified and adequate to company's need competences of members, allowing supervision and monitoring of companies' results (very important skill: asking the right questions).
- C. Absence of conflicts of interest – determines level of boards objectiveness.
- D. Diligence secure receive reliable and sufficient information from the board, enabling the implementation of the tasks imposed on the board.
- E. Ability to present board of directors with new challenges and goals.
- F. Board not exceeding its competence.
- G. Adequate to the workload remuneration of the supervisory board members.

Figure 4. Percentage of answers chosen as part of the survey to the question: What are the most important determinants of supervisory board's effectiveness? Source: own study.

Over half of the respondents (51.16%) represent the view that understanding of the company's business model and of the processes taking place within it constitutes an fundamental element of effective operation of the supervisory board. This answer expressed by the respondents seems to be an obvious one, as today it is difficult to imagine effective functioning of any commercial institution, producing and selling goods, whose managers do

not understand the rules of functioning of the modern market. Every third respondent (32.56%) indicated the need for the members of the supervisory board to provide guarantees of no broadly understood conflict of interest, so that they will make their decisions in an objective manner, not burdened with external obligations. Also, more than 1/3 of respondents (30.23%) is of the opinion that the ability to create organizational and business challenges for board of directors members is a very desirable feature that should characterize the supervisory board of companies of the domestic energy sector.

9. Summary

Survey results presented in the paper have been confronted and compared with the results of conducted expert interviews and indicate that in case of almost all areas experts asked were in agreement with the surveyed members supervisory boards.

Both in terms of factors limiting the effectiveness of supervisory boards and in terms of cooperation between the Management Board and the Supervisory Board, it should be concluded that the unlimited information flow, clearly identified and communicated by the supervisory board needs as to what information on the company's current operations they require and relevant competencies of board's members are the key elements that will result in desired development of the company and are indispensable components of modern management of energy sector companies.

In addition, appropriate professional competences were among the expected characteristics of supervisory board members of the energy sector companies in Poland. The key members are mainly required to have experience in professional management and knowledge of the industry. The research results coincide with the information sources that clearly indicate that a supervisory body's member should have appropriate competences to properly perform the supervisory duties arising from the possessed knowledge (education, training, professional titles, or academic degrees, etc.), professional experience and other necessary skills necessary to perform the entrusted function. The worldwide crisis triggered by the pandemic and its consequences, which to this day determines the shape of the market, has impacted the supervisory boards' functioning.

In summary leading determinants in the process of effective management of supervisory board are the professional experience and diverse and adequate competencies of the board members, adequate to the company's needs. In times of crisis, the supervisory board should collaborate with the management board. The supervisory board and management board should work out solutions together that should be implemented in the best interest of employees and the company.

The results of the research indicate that the effectiveness of the supervisory board is determined by the competences of its members, the article shows that the most important expectation set for supervisory boards is competence, where almost 63% of respondents responded so. In turn, among the indicated key competences, the highest score, almost 49% achieved "professional experience in the field of management in the sector".

In the context of subsequent questions, on the basis of this study, the question can be asked whether it is also possible to relate the effectiveness of the supervisory board to the effectiveness of the company.

The authors trust that the obtained research results will be the basis for further research on the functioning of corporate governance in the energy sector, the convergence of corporate governance systems taking into account corporate, industry and political and legal conditions, and ways to improve the mechanisms and tools of corporate governance.

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DETERMINANTS OF ECO-INNOVATIONS – PRELIMINARY FINDINGS FROM SME SECTOR IN SILESIAN VOIVODESHIP

Małgorzata MARKOWSKA

Central Mining Institute; Katowice; mmarkowska@gig.eu; ORCID 0000-0002-9105-6856

Purpose: The aim of the paper is to identify and assess the various factors – legal, technological or social, that determine the process of eco-innovation development in SMEs sector companies.

Design/methodology/approach: The first part of this paper presents literature considerations on eco-innovation and its characteristics as well as types of determinants affecting its implementation. The occurrence and importance of particular determinants for the implementation of eco-innovation was then evaluated as a result of an own survey research carried out in 2020 on a sample of 96 SMEs implementing technologies for environmental protection from the Silesian Voivodeship.

Findings: The analysis and the obtained results indicate a significant positive influence of managerial environmental awareness, slightly less significant impact of final consumers and communication style in the company and significant impact of legal regulations, which may be a barrier for eco-innovation implementation.

Research limitations/implications: The results provide a basis for activities to improve the effectiveness of the implementation of eco-innovation in enterprises. Limitations of the study include the subjectivity of respondents' opinions and the relatively small research sample, which may limit the generalization of the results.

Practical implications: The results provide a basis for activities to improve the effectiveness of the implementation of eco-innovation in enterprises. Limitations of the study include the subjectivity of respondents' opinions and the relatively small research sample, which may limit the generalization of the results.

Originality/value: The contribution of the research to the development of management sciences mainly includes the formulation and empirical verification of a set of key factors determining the process of eco-innovation implementation in SMEs in post-industrial region.

Keywords: eco-innovation, determinants of eco-innovation, small and medium-sized enterprises (SMEs), Silesian Voivodeship.

Category of the paper: research paper.

JEL Classification: O31, O32, Q55.

1. Introduction

Modern companies operating on the market strive to obtain competitive advantage, reduce costs, increase efficiency and environmental solutions, while meeting customer expectations. This task is particularly important for those companies for which the impact on the environment is not indifferent. Economic development should proceed in a sustainable manner, maintaining economic, social and environmental equilibrium. The implementation of modern environmental technologies is becoming an important challenge for modern economies. It is therefore necessary to take actions aimed at rational use of resources. Regarding the discussion about integrating in-novation and sustainability domains, one of the first studies published in the literature were carried out by C. Fussler and P. James (1996), and K. Rennings (1998, 2000). C. Fussler and P. James (1996) are credited as the authors of the term “eco-innovation” in a book titled “Driving Eco-Innovation: A Break-through Discipline for Innovation and Sustainability” (Pacheco et al., 2018).

Although the term eco-innovations became known in the late 90-ties, the eco-innovations are still relatively new category in economic and management sciences. The implementation and management of eco-innovation has been widely discussed in the context of large companies, mainly in the industrial and technology sectors. However, the discussion on the impact in small and medium enterprises (SMEs) is still very inconclusive.

Therefore, the importance of this study is to broaden the understanding of the determinants of eco-innovation in SMEs, aiming to provide a more comprehensive understanding of the reality of small businesses. An appropriate strategy to better understand this phenomenon and landscape is to analyze what are the determinants of eco-innovation in Silesian SMEs and whether or not they are similar to the empirical results available in the literature.

The paper presents the results of own research conducted in 2020 in the Silesian Voivodeship. The key factors determining the generation of eco-innovation were identified on the basis of the literature review and the own questionnaire was elaborated to measure the importance these determinants in Silesian SMEs. In the first phase of the research, the enterprises were selected purposively - they had to belong to the SME sector, run their business in the Silesian Voivodeship and their activities should be related to environmental technologies. Then random selection was applied. As a result a total of 96 complete questionnaires were obtained.

The structure of the paper is as follows. First, the literature is reviewed and the definition and the determinants of eco-innovation is described. Then, the methodology is described. The research findings are delivered in section 4. The paper ends with the discussion and conclusions.

2. Theoretical background and literature review

2.1. The concept and types of eco-innovation

The paradigm of sustainable socio-economic development balanced in terms of its impact on the natural environment began to gain importance in the 1990s. Dynamic changes taking place in the modern world, including the growing ecological burden associated with the depletion of natural re-sources and generation of excessive amounts of pollution, the need to respect increasingly stringent environmental norms and standards, as well as growing environmental awareness of consumers resulted in the need for companies to find new sources of competitive advantage (Wagner, 2009). Key in this context is the development of innovation potential (Pichlak, 2012), understood as the ability and willingness of the organization to generate and implement innovation (Poznańska, 1998). At the same time, it has become more and more common to distinguish the so-called eco-innovation among all innovation activities.

Despite the fact that eco-innovations became the subject of research already in the 1970s, and the term eco-innovations became common in the late 1990s (Bałazińska et al., 2020), the eco-innovations are still relatively new category in economic and management sciences and due to the large scope of their meanings, ecological innovations can be interpreted very broadly. Therefore there are many definitions and use of different concepts and terminology for this phenomenon, including among others eco-innovation, ecological innovation, environmental innovation, green innovation, sustainable innovation, etc. (Fussler, James, 1996; Rennings, 2000; PARP, 2008; Ekins, 2010; Miedzinski, Charter, O'Brien, 2013). Although, only the name of eco-innovation is used in this paper.

The following table summarizes selected definitions of eco-innovation, that allow a better understanding of the variants and evolution of the concept (Table 1).

Table 1.
Selected definitions of eco-innovations

| Definition | Authors |
|---|--|
| Eco-innovation is the process of developing new products, processes or services which provide customer and business value but significantly decrease environmental impact" | C. Fussler, P. James (1996) |
| Intentional conduct characterized by initiative, comprising the stage of product design and integrated management during its life cycle, which subsequently contributes to pro-ecological modernization of the industrial era's societies, by accounting for environmental issues in the development of products and related processes. Eco-innovations lead to integrated solutions aimed at reducing the expenditure of resources and energy, while simultaneously improving the quality of products and services. Technological innovation is one of the ways of pursuing eco-innovation | M. Carley, P. Spapens (2000) |
| New products and processes that provide customer value, while using fewer resources and resulting in reduced environmental impacts | G. Johansson, T. Magnusson (1998) OECD (2009) |

Cont. table 1.

| | |
|--|--|
| New or modified processes, techniques, practices, systems and products aimed at preventing or reducing environmentally negative impacts or environmental damage | K. Rennings (2000) J. Horbach (2008) T.J. Foxon, P. Pearson (2008) J. Horbach, C. Rammer, K. Rennings (2012) |
| “Eco-innovation is any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy” | European Commission (2007) |
| “...any innovation, implemented in accordance with the applicable law, which benefits the natural environment, in particular through minimizing consumption of natural resources per produced product unit, as well as minimizing the emission of hazardous substances into the environment during production, use and after use of the product” | PARP (2008) |
| “Eco-innovation is the production, application or exploitation of a good, service, production process, organizational structure, or management or business method that is novel to the firm or user and which results, throughout its life cycle, in a reduction of environmental risk, pollution and the negative impacts of resource use (including energy use) compared to relevant alternatives” | R. Kemp, P. Pearson (2008), OECD (2009) |
| “[eco-innovation is] ... innovation that improves environmental performance.” | J. Carrillo-Hermosilla, P. del Rio, T. Konnola (2010) |
| “Eco-innovation is an innovation that improves both economic and environmental performance” | G. Hupples et. al. (2008) P. Ekins (2010) |
| “Eco-innovation is any innovation that reduces the use of natural resources and decreases the release of harmful substances across the whole life-cycle” | Eco – innovation Observatory EIO 2011 |
| “Eco-innovation is any innovation that makes progress towards the goal of sustainable development by reducing impacts on the environment, increasing resilience to environmental pressures or using natural resources more efficiently and responsibly” | European Commission (2011) |

Source: own study based on: Fussler and James, 1996; Carley and Spapens, 2000, p. 157; Rennings, 2000; EC, 2007; Foxon, Pearson, 2008; Horbach, 2008; Hupples et. al., 2008; Ekins, 2010; EC, 2011, p. 3; EIO, 2011; Horbach, Rammer Rennings, 2012; Pacheco et.al., 2017; Woźniak, Woźniak, 2021.

Although official definitions from EU documents can be found in the table above, even the European Economic and Social Committee, which evaluated the provisions of the Eco-action Plan (Eco-AP), pointed to some difficulties in establishing a universal, widely accepted definition of eco-innovation (Opinion..., 2012).

Based on the most generally accepted definition, eco-innovations are new or significantly improved solutions (products, management methods, manufacturing methods, ways of service provision and processes of resource exploitation) which ensure lower risk of environmental pollution, use fewer raw materials and release fewer pollutants than alternative solutions, so reduce negative impact on the natural environment or contribute to the protection of the environment, while delivering value to consumers and business (Cooke, 2011), as the concept of eco-innovation emphasizes the integration of environmental management into the economic process (Karakaya, Hidalgo, Nuur, 2014).

Eco-innovations may be systematized taking into account various criteria. For this reason, as in the case of innovations, these divisions are mostly not precise, as the same eco-innovation may be classified in several groups. Most often, eco-innovations may be of the following nature:

process, product, organizational or marketing. At the same time, eco-innovation is not limited to innovation in products, processes, marketing methods and organizational methods, but the scope of eco-innovation may go beyond the conventional organizational boundaries of the innovating organization and involve broader social arrangements that trigger changes in existing socio-cultural norms and institutional structures (OECD, 2009; Machiba, 2010).

The following table (Table 2) summarizes selected types of eco-innovations and their explanations and examples.

Table 2.

Examples of specific types of eco-innovation

| Type of eco-innovation | Understanding and examples |
|-------------------------------|---|
| Product eco-innovation | <ul style="list-style-type: none"> ▪ launching on the market a product or service that is new or significantly improved in terms of its features or uses, ▪ producing goods in a manner that leads to decreased environmental impacts and less resource use during operation, e.g. due to eco-design, ▪ replacing inputs with materials of improved characteristics (breathable textiles, lightweight but resistant composites, environmentally friendly plastics, etc.), ▪ products with significantly reduced energy consumption (energy efficient refrigerators, etc.), ▪ green financial products (e.g. eco-leases), environmental services (e.g. waste management) and less resource intensive services (e.g. car sharing). |
| Process eco-innovation | <ul style="list-style-type: none"> ▪ implementation of new or significantly improved production or supply methods, which reduce material consumption and risks as well as resulting in cost savings, ▪ substitution of harmful inputs during production (e.g. replacing toxic substances), ▪ optimization of the production process (e.g. improving energy or resource efficiency), ▪ reducing the negative impacts of production outputs (e.g. emissions, waste). |
| Organizational eco-innovation | <ul style="list-style-type: none"> ▪ introduction of organizational methods and management systems for dealing with environmental issues in production and products (e.g. pollution prevention schemes, environmental management and auditing systems, chain management), ▪ various collaborative organizational forms and their potential eco-innovative qualities (e.g. business networks and clusters, advanced solutions in industrial symbiosis). |
| Marketing eco-innovation | <ul style="list-style-type: none"> ▪ introduction of new marketing methods or techniques, which lead to changes in product design or packaging, product placement, product promotion or pricing with particular regard to environmental principles or the shaping of ecological awareness as part of promotion (e.g. eco-labelling), ▪ introduction of green branding for better commercialization of products or services. |
| Social eco-innovation | <ul style="list-style-type: none"> ▪ market-based dimensions of behavioral and lifestyle change and the ensuing demand for green goods and services, ▪ user-led innovation, meaning that the functionality of new goods is developed with stakeholders, thereby minimizing the risk of superfluous product features, ▪ product sharing, which may lead to an absolute decrease of material use without diminishing the quality of the services they provide to users, ▪ innovative social concepts (e.g. green living). |

Cont. table 2.

| | |
|-----------------------|---|
| System eco-innovation | <ul style="list-style-type: none"> ▪ aiming to improving the efficiency of the whole system rather than focusing on the individual components used in systems, ranging from “complex products” (e.g. houses) to entire production and consumption systems (e.g. cities), ▪ collection of changes implemented by design (e.g. system eco-innovation related to a house is not just about insulating windows or using a better heating system, but about innovating the overall design to improve its functionality), ▪ set of interconnected innovations that improve or create entirely new systems delivering specific functions with reduced overall environmental impact, e.g. shared-bike systems (and related infrastructure such as bike stations), as well as reduction of the need for travel (requiring that supermarkets, daycare facilities, etc., are incorporated into new housing developments). |
|-----------------------|---|

Source: own study based on: Rennings, 1998; Charter, Clark, 2007; Kemp, Pearson, 2008; Wagner, 2008.

2.2. Determinants of eco-innovations

An organization’s ability to generate and implement innovation, including eco-innovation, is the result of the existence and impact of various factors that determine its (eco)innovativeness. The determinants of the processes of implementation and generation of eco-innovation are very diverse and multifaceted, and include both determinants that can be opportunities and others that are barriers or threats to the development of eco-innovation.

To identify the main factors stimulating and limiting the generation of eco-innovation, the existing divisions and classifications of these factors in the literature were analyzed. A significant number of authors divide the factors determining the generation of eco-innovation into external (exogenous), whose source lies in the environment of the organization, and internal (endogenous), depending on its internal specificity (del Río, 2009; Araszkievicz, 2012; del Río, Peñasco, Romero-Jordán, 2016). Some authors complement the classification by including international factors (Hrabynskiy, Horin, Ukrayinets, 2017) or factors resulting from the characteristics of the eco-innovation itself (Araszkievicz, 2012). O.E. Hansen et al. (2002) state that the eco-innovation capability of SMEs is a result of the interplay between competencies, network relationships and the strategic orientation of the firm, indicating that policies to support the adoption of eco-innovation by SMEs must take an integrated form.

According to J. Horbach (2008), the factors determining eco-innovativeness form three main groups: demand factors, supply factors and external factors related to public institutions regulation. A. Reid and M. Miedziński (2008) adapt J. Horbach's approach by adding the tax policy, which can affect the prices of eco-innovative goods and services by shaping their market. The Polish Agency for Enterprise Development indicates four main groups factors affecting the rate of implementation of eco-innovations (PARP, 2015): (i) supply factors – related to technological trends (e.g. CP, CSR), (ii) demand factors – related to consumer preferences in terms of environmentally-friendly production methods or products (greens consumers), (iii) regulatory environment (legislation), (iv) company-specific factors – related to industry, company size, environmental policy, financial strength, market share.

It is noticeable that in the literature the division and classification of determinants of eco-innovation are very diverse, and many authors do not categorize or group the factors, but only list and describe those that are important for the innovativeness of the company, depending on the direction of the analysis and regional conditions.

For example, as a result of investigating the barriers and driving aspects for eco-innovation in German SMEs that participate in an innovation network called Ecoprofit, J. Klewitz, A. Zeyen and E.G. Hansen (2012) find that the main drivers of eco-innovation are (i) cost efficiency, proactive contact through external initiatives and the desire for continuous improvement; (ii) cost, cost reduction and risk management (avoiding negative environmental impacts and legislation compliance); (iii) improving energy efficiency, becoming more attractive to employees (creating a shared company culture), reputation and brand image, and profit and sales (putting pressure on suppliers to meet sustainable standards). As highlighted by J. Zarębska and M. Michalska (2016) and J. Przychodzeń (2019) an important factor influencing the implementation rate and type of eco-innovations is also the increase in environmental awareness of consumers and stakeholders, the dissemination of knowledge and access to modern technologies from external sources and globalization processes with particular emphasis on the development of multinational corporations and the resulting increase in interest in environmental management tools and strategies, such as implemented environmental management standards (EMAS, ISO 14000), strategies of CP (Clean Production) and CSR (Corporate Social Responsibility), eco-design or eco-labeling.

Generally, the analysis of the literature shows that the determinants of eco-innovation include among others: public policy (Ghisetti, Pontoni, 2015; del Rio et al., 2016), associated with legal provisions and regulations (Cleff, Rennings, 1999; Hojnik, Ruzzier, 2016) and financial incentives (Kemp, Pearson, 2008); cost reduction, profit, social pressure (including customers' expectations) and the expected improvement of the company's image (Kemp, Pearson, 2008; Kammerer, 2009; Bossle et al., 2016), opportunities and changing conditions for cooperation (Rave, Goetzke, Larch, 2011; Horbach et al, 2012;) and internal capabilities (Horbach, 2008; del Rio et al., 2016) with some authors arguing that organizations implementing eco-innovations rely more on the support of business environment organizations, the results of public research organizations and institutions and the knowledge of suppliers, while organizations implementing non-environmental innovations – show much greater dependence on internal human capital (Belin, Horbach, Oltra, 2011).

The analysis of the literature shows that the main obstacle to the development of eco-innovation is the economic factor (lack of own resources). Enterprises make little use of external sources such as credits, loans and EU funds, also because of the fact, that the process of applying for these funds itself causes some problems for entrepreneurs, which discourages them from applying for them (Wielewska, 2019). Low interest in the introduction of ecological innovations in Poland is also a result of lack of knowledge. It is most visible in the SME sector,

as many of these companies have little capital, lack of experience in this field and small human resources (Zuzek, 2015).

The review of the literature and the results of existing research indicate the existence of many proposals of factors determining the eco-innovation generation process in SMEs. It is difficult to assess which of these factors are the most important in the development of eco-innovations, as empirical research provides various points of view on this topic (Marczewska, 2016). Additionally, some of these approaches are fragmentary and focus on analyses narrowed to specific macroeconomic conditions, specific types of eco-innovations, cover only selected locations or chosen sectors, or even companies. Therefore, there is still a research gap in an approach aimed at identifying and assessing strategic factors determining the eco-innovation development by SMEs.

Within own research, based on the literature review, determinants of eco-innovations have been divided into 4 main groups (Table 3).

Table 3.
Determinants of eco-innovations

| Group of determinants | Aspects |
|--|--|
| Regulation and policy determinants | <ul style="list-style-type: none"> ▪ Implementation and institutionalisation of environmental policy instruments: economic and regulatory instruments ▪ Regulatory design: stringency, flexibility, time frame ▪ Anticipation of future environmental regulations |
| Market (demand) factors | <ul style="list-style-type: none"> ▪ The intensity of competition and market position, impacts of competitors strategies ▪ Impact of final consumers and users of products and services, especially customers' ecological requirements ▪ Suppliers impact, including greening the suppliers and opportunities to work with suppliers on early design and development of eco-innovative solutions |
| Technological factors - proximity and availability of technology outside the company | <ul style="list-style-type: none"> ▪ Cooperation with universities and scientific institutes, technology parks and business incubators or business environment institutions (BIOs) ▪ Access to state-of-the-art technologies as a result of participation in cooperation networks ▪ Access to best knowledge from cooperation networks ▪ Access to advisory services, regardless of the source |
| Internal context factors | <ul style="list-style-type: none"> ▪ Organizational resources, including key competencies ▪ Environmental Management Systems (EMS) ▪ Communication system within the organization (information flow, opportunities for collaboration and mutual learning) ▪ Managerial environmental awareness (including environmental risk awareness (ERA) and environmental cost-benefit awareness (ECA)) |

Source: own study, based on: Clef, Rennings, 1999; Rennings, Zwick, 2002; Horbach, 2008; Rave, Goetzke, Larch, 2011; Ghisetti, Pontoni, 2015; Zuzek, 2015; del Río, Peñasco, Romero-Jordán, 2016; Hojnik, Ruzzier, 2016; Hrabynskiy, Horin, Ukrayinets, 2017; Przychodzeń, 2019

The results of own research are presented in the further part of the paper.

3. Research methodology

In order to determine the main determinants of eco-innovative activities of SMEs in Silesian Voivodeship, empirical research was conducted and its partial results are presented in this study. The research was carried out in the Silesian Voivodeship in the first half of 2020 using the questionnaire method.

A multidimensional questionnaire was developed on the basis of an in-depth analysis of the literature and own experience, which combines a tool to measure the factors that determine the generation of eco-innovation, the level of eco-innovation and organizational effectiveness. In order to measure the individual determinants of eco-innovation, consisting of the influence of each group of factors, a five-point attitude scale developed by R. Likert was used (from 1 – no impact, to 5 – very strong impact).

Purposeful sampling was implemented, the selected companies had to belong to the SME sector, run their business in the Silesian Voivodeship and their activities should be related to environmental technologies. The adoption of the last condition resulted from author's experience within the Technologies for Environmental Protection Observatory operating within the framework of the Network of Regional Observatories (Bondaruk, Gieroszka, Kruczek, 2016). Then, random selection was applied. The questionnaire was addressed to owners, managers or persons responsible for environmental protection in the company.

A total of 96 complete questionnaires were obtained. The research covered 36 micro enterprises (37,5%), 17 small companies (17,7%) and 43 medium-sized enterprises (44,8%).

The majority of surveyed companies (49%) are active on the market at regional scale, 25% are active on a national scale, whereas 26% internationalize their activities. The sample included mainly service enterprises (47%), less often operating in production sector (26%) or trade (6%). The rest of responders indicated multiple activities. The research sample included companies of different ages – companies with a business period less than 5 years (22,9%), of 10-20 years (29,2%), as well as mature entities with a market activity between 20-30 years (33,3) or even longer than 30 years (14,6%).

The empirical material from the surveyed enterprises was collected based on the judgments of the respondents.

The collected material was subjected to statistical analyses, which were performed using IBM SPSS Statistics 25.0. Basic descriptive statistics were calculated using the program along with the Shapiro-Wilk test of normality. To determine the relationship between quantitative variables, correlation analysis was performed using Pearson's r coefficient.

The purpose of this paper, however, is to focus only on those results that relate to the determinants of eco-innovation. These results are discussed and presented in the next chapter.

4. Research findings and discussion

The research has confirmed that each innovation idea arises under different circumstances, so it is difficult to describe a single, precise approach to this issue. For this reason, respondents were sometimes unable to clearly identify if specific factor had a dominant influence, without indicating eco-innovation characteristics.

Nevertheless, according to the most respondents, the following groups of determinants have “strong impact” or “very strong impact” on the process of generating eco-innovations: managerial environmental awareness (71,88%) and regulatory aspects (legal regulations) (70,83%). The next most significant factors were impacts of final customers – indicated as having “strong impact” or “very strong impact” by 61,46% of respondents and internal communication system in the organization (60,42%) (Figure 1).

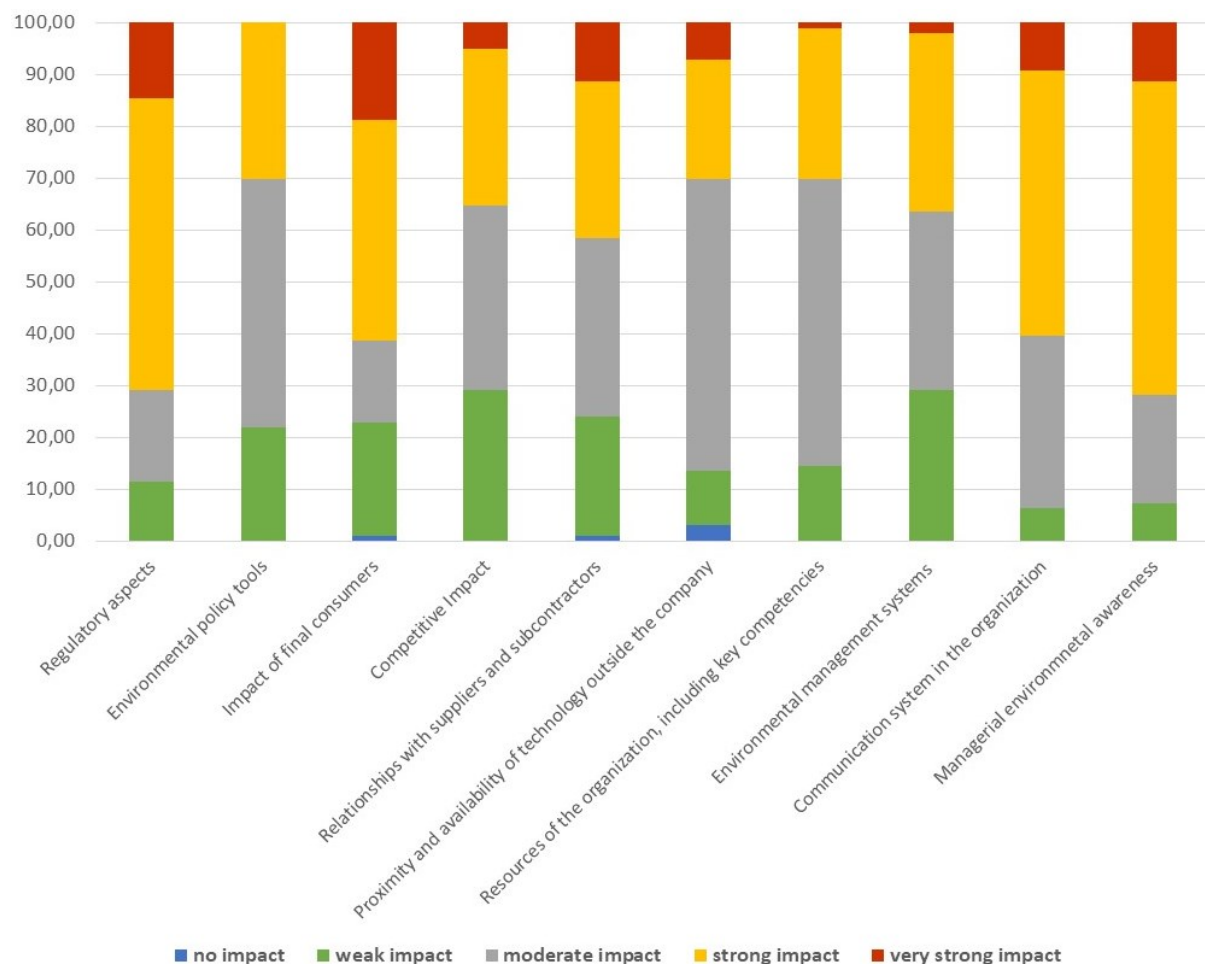


Figure 1. The strength of impact of particular groups of eco-innovations determinants. Source: own elaboration based on the results of the conducted survey.

What’s important, regulatory aspects tend to be seen as barriers to enterprise growth and their eco-innovativeness, as 40,63% of respondents indicated that it was "difficult" or "very difficult" for their company to comply with national environmental regulations over the past 3 years. In the case of international environmental regulations, the value of this indication was

only 21,87%, while 47,92% of respondents felt that the requirements of international law are "neither easy nor difficult" to meet (Figure 2). This may be due to the fact that 70% of surveyed companies are active on the market at regional or national scale, which means that they have to deal mostly with national regulations on a daily basis. Additionally, 64,58% of respondents indicated, that "Existing national environmental regulations are very restrictive", whereas 65,63% of respondents "agree" or "strongly agree" that the frequent and significant changes in national environmental regulations impacting.

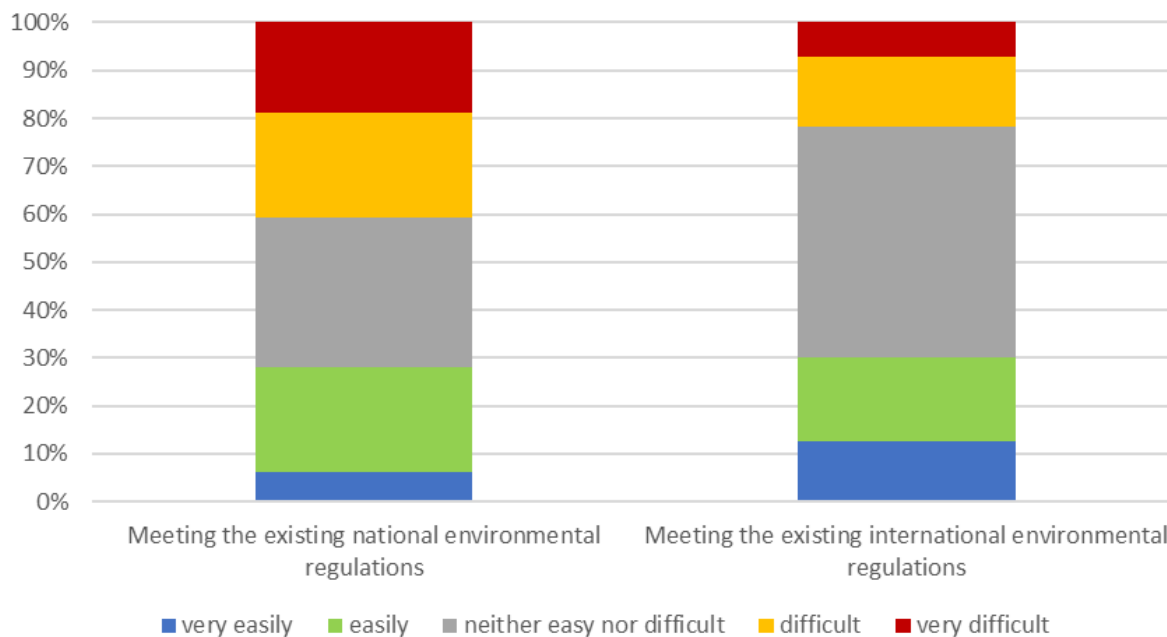


Figure 2. Challenge of meeting environmental regulations. Source: Own elaboration based on the results of the conducted survey.

As the problem of defining and evaluating the forces that positively and negatively affect the eco-innovation activities of companies is very important not only for individual companies but also for industry organizations, R&D institutes and local and regional governments, the dominance of environmental regulations as a determinant of eco-innovation is consistent with the results of many theoretical and empirical studies carried out over many years and in different regions (Cleff, Rennings, 1999; Rennings, Zwick, 2002; Rave et al., 2011). Also the tentative negative impact of regulatory factors is in line with previous experiences described in literature, as legislation seems to be the most commonly experienced external barrier in some regions (Hojnik, Ruzzier, 2016; del Rio et al., 2016; Hrabynskiy et al., 2017).

At the same time, impact of the "environmental policy tools" has been found in Silesian Voivodeship as significantly less important than regulations (Figure 1). Although since the early 1970s, environmental policies have made a shift from end-of-pipe solutions to prevention and control, for many responders – financial incentives are still equated as the most important instruments. Therefore, responders have been asked, among others, about the importance of preferential taxes and subsidies. Less than 16% of responders agree that there are any

preferential taxes for eco-innovations implementation, whereas less than 42% - notice the existence of subsidies. At the same time, almost 42% “agree” or “strongly agree” that the existing system of environmental taxes hampers the eco-innovation initiatives and their development (Figure 3).

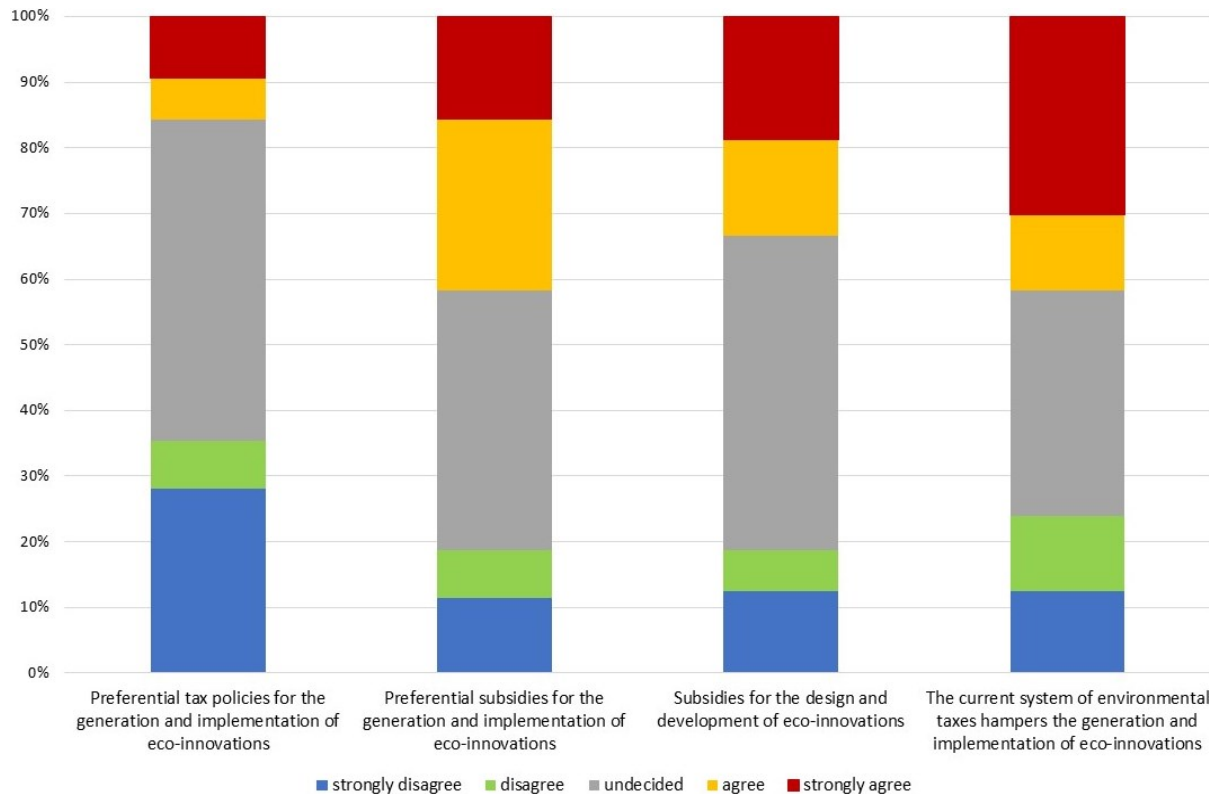


Figure 3. Existence of different aspects of environmental policy and their importance for eco-innovation development. Source: Own elaboration based on the results of the conducted survey.

The other important external driver, identified in many researches is a final customers pressure (Cleff, Rennings, 1999; Rave et al., 2011; Pichlak, 2012; Hojnik, Ruzzier, 2016; Hrabynskiy et al., 2017). Among the conditions of this determinant is the increase in environmental awareness of consumers, translating into preferences for environmentally friendly products, which can be interpreted as an environmentally oriented demand effect. Although M. Koszewska’s (2015) findings show that consumers on the Polish market have trouble finding and distinguishing ecological products from conventional ones, 72,92% of respondents of this survey “strongly agree” or “rather agree” with the sentence that “An organization's compliance with environmental requirements is an important issue for its customers”. At the same time, only 58,33% of respondent indicate, that “Environmental requirements of customers stimulate efforts within the organization”, which is in line with overall calculation of strength of this determinant, as shown on Figure 4.

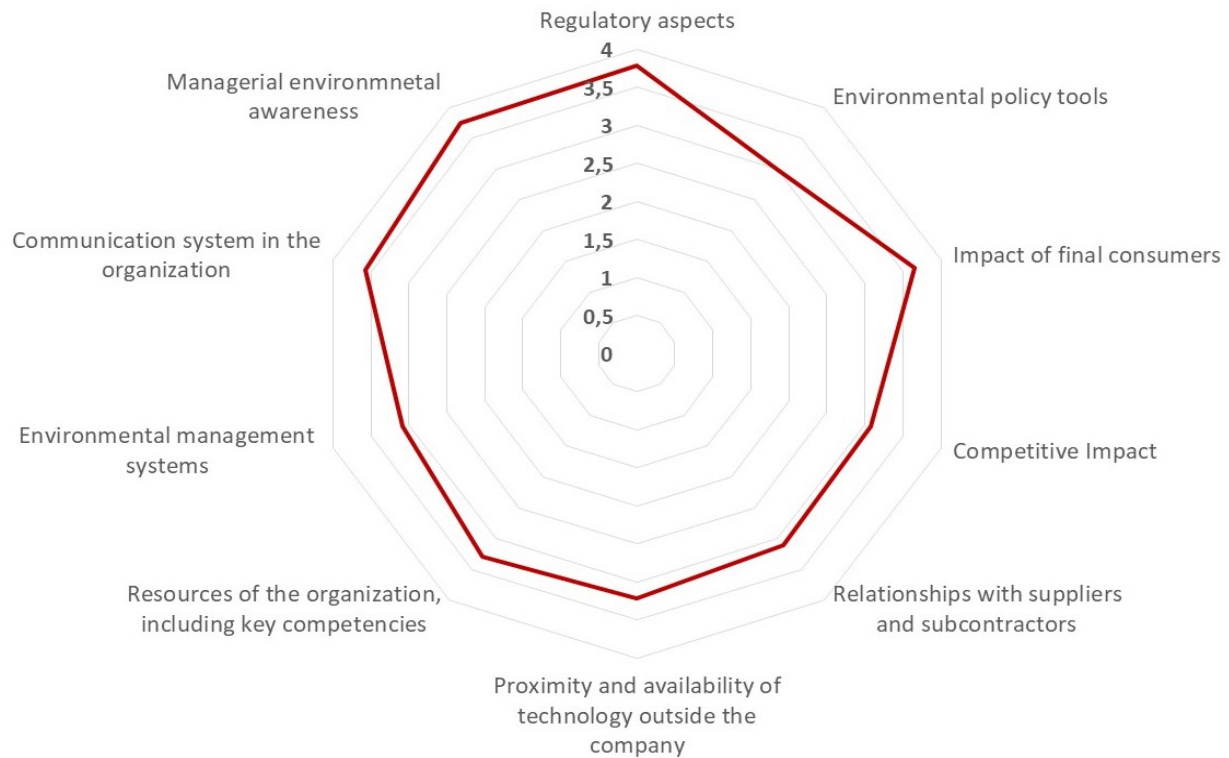


Figure 4. Determinants of eco-innovation implementation – mean results on Likert scale. Source: own elaboration based on the results of the conducted survey.

Managerial environmental awareness is an internal driver, which plays a crucial role in taking business decisions in more sustainable way. Following D. Gadenne, J. Kennedy and C. McKeiver (2009) and X. Peng and Y. Liu (2016), managerial environmental awareness has been divided into environmental risk awareness (ERA) and environmental cost-benefit awareness (ECA). Within the research carried out in Silesian Voivodeship, items related with ERA have been indicated as having “strong impact” or “very strong impact” on the process of generating eco-innovations by 79,17% of respondents, whereas items related with ECA – by 59,37%, which indicates that this type of environmental awareness was dominant among the respondents. Executives with a dominant environmental risk awareness (ERA) are driven by environmental ethics and moral considerations – they pay much more attention to the negative effects their company has on the environment and the environmental problems in the industry. They are also more knowledgeable about how environmental laws and regulations affect the company and what “environmental best practices” exist in the industry. Therefore, executives with a higher ERA are more likely to focus on eco-innovations with higher environmental performance, and therefore are more likely to implement process and product eco-innovations (improving existing products or introducing new products) to reduce their environmental impact (Peng, Liu, 2016). In contrast, dominant environmental cost-benefit awareness (ECA) refers to managers' understanding of the potential savings and/or increased profits to the organization from implementing better environmental and pollution prevention practices, reflecting profit motivation. Managers with higher ECA thus prefer environmental innovations with higher efficiency and lower investment.

5. Conclusions

The research has confirmed that each innovation idea arises under different circumstances, so it is difficult to describe a single, precise approach to this issue. Therefore, in order to determine the main determinants of eco-innovative activities of companies in the SME sector, empirical research was conducted, the results of which are partially presented in this study. The results of author's survey shows that the main factors influencing the adoption of eco-innovation activities are regulatory aspects (legal regulations), managerial environmental awareness, impacts of final customers as well as communication style and system in the company. In general, most of these findings are in line with key determinants of eco-innovations identified by many authors in earlier studies. At the same time, as some of the earlier approaches are fragmentary and focus on analyses narrowed to specific macroeconomic conditions, specific types of eco-innovations, cover only selected locations or chosen sectors, or even companies, the contribution of the research to the development of management sciences mainly includes the formulation and empirical verification of a set of key factors determining the process of eco-innovation implementation in SMEs in Silesian Voivodeship reality, whose post-industrial character of the region, including especially the existence of significant negative externalities of the heavy industry influence on the intensive development of technologies for environmental protection.

The factors influencing the decision by Silesian companies to implement eco-innovations are: legal regulations concerning the environment, applicable taxes, fees and penalties associated with environmental pollution, need to meet requirements for contracts in public procurement desire to reduce high costs of energy, water and materials, current or expected market demand for eco-innovations. Also the importance of managerial environmental awareness as an crucial internal driver was confirmed.

The result of the research showed also that small and medium-sized enterprises, despite their willingness to introduce pro-environmental innovations, encounter a number of barriers preventing their development in this respect. The most important of them include: lack of financial resources for this type of solutions, frequent changes in the law and unclear environmental regulations.

An innovative contribution of the obtained research results to the development of management sciences is the identification and assessment of strategic factors determining the implementation of eco-innovations in the conditions of the Silesian Voivodeship, whose post-industrial character of the region, including especially the existence of significant negative externalities of the heavy industry influence on the intensive development of technologies for environmental protection. The need for the development of environmental technologies and process and organizational eco-innovations is reflected in the development documents of the Silesian Voivodeship, which identify technological areas that form the basis of regional specialization (PRT Implementation Model, 2015) and in the conducted strategic activities of

the Voivodeship for the development of the innovation ecosystem. In this context, relatively low ratio of determinants related to the importance of proximity and availability of technology outside the company and opportunities for knowledge exchange (indicated as having “strong impact” or “very strong impact” on the process of generating eco-innovations by only 30,21% of responders) clearly suggests the need to increase the awareness of entrepreneurs on existing opportunities for knowledge exchange, improve the effectiveness of existing networks and regional Research and Innovation Infrastructure performance and business use. These conclusions confirm the findings from the report "Improving the efficiency of research and innovation infrastructure in the Silesia Voivodeship -from divided to integrated and sustainable cooperation" (Kruczek et al., 2020). This is particularly important as opportunity for local cooperation for eco-innovation translation into reduced uncertainty in the implementation of eco-innovation. In this context, networking with other companies and institutions is particularly important. The main forms of support from the institutional environment in Silesian Voivodeship include among others: consulting, business incubators, technology parks. However, despite the observed increase in the number of these centers, the support that companies can count on is still insufficient. It is an even more important factor, because the lack of knowledge, previous innovative experience and accessibility to modern technologies, combined with relatively small capital at the disposal of SMEs, translates into a low interest in introducing ecological innovations in Poland, being still far below the European average (Woźniak, Woźniak, 2020).

Acknowledgments

Presented results have been developed as part of the project Network of Regional Specialised Observatories in the Entrepreneurial Discovering Process in the Silesian Voivodeship (SO RIS in PPO – II) implemented under the Regional Operational Programme of the Silesian Voivodeship for the years 2014-2020 (UDA-RPSL.01.04.01-24-06C8/19-00).

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FINANCIAL MANAGEMENT AND RISK AMONG POLISH DEVELOPERS IN THE PERIOD OF COVID-19 PANDEMIC

Józef MYRCZEK^{1*}, Piotr TWOREK², Zofia PODSTAWKA³

¹ University of Bielsko-Biała; jmyrczek@ath.bielsko.pl, ORCID: 0000-0002-9351-1410

² University of Economics in Katowice; piotr.tworek@ue.katowice.pl, ORCID: 0000-0002-2871-2902

³ Student of University of Bielsko-Biała; zp053151@student.ath.edu.pl, non-academic employee

* Correspondence author

Purpose: The paper aims to examine the effectiveness of financial management in business activities conducted by property development enterprises, seen as participants of investment and construction processes in Poland, in the period of the COVID-19 pandemic. The discussions outlined in the paper are underpinned by the category of risk in the construction business and refer to the developers whose operations are based predominantly in the south of Poland.

Design/methodology/approach: In its basic part the paper deals with the property development companies in the period of time spanning from December 2019 to December 2020. The empirical research was carried out using case studies. It also takes advantage of some elements of comparative analysis, as well as the method of synthesis and the concept of deduction. In their discussions the authors also draw on their own expertise and the experience gained from the studies they have carried out in the area of risk management in construction organisations for many years now. The conclusions the publication arrives in result also from the knowledge extracted from the literature on the subject matter.

Findings: The paper offers an empirical verification of the theoretical contents found in the scholarly literature.

Research limitations/implications: The paper addresses a limited range of issues only, selected from the vast area of financial and risk management in property development enterprises which operate on the residential real-estate market.

Practical implications: The paper presents some practical insights (the utilitarian dimension of knowledge), verified empirically by means of analyses and evaluations.

Originality/value: The deliberations in the paper are hoped to cast some light onto the conditions in which property development enterprises conduct their business during the COVID-19 pandemic and look at their financial standing by analysing the risks encountered in the construction industry. The discussions reviewed in the paper refer to the notion of a so-called black swan, i.e. a category addressed by risk management publications.

Keywords: Financial management, construction risk, property development enterprises, real-estate market, case study analyses.

Category of the paper: Research paper.

1. Introduction

The pandemic brought about by the SARS-CoV-2 virus, causing a contagious COVID-19 disease, has provoked the need for the science to take a new look at the altered conditions in which the construction business operates but also to address a new category of risk connected with a global pandemic (the epidemiological risk). The scholarly literature on the construction business did not use to devote much thought to that threat, which may be reviewed here by using the universal risk mechanism (Flanagan, and Norman, 1993; Palmer et al., 1993; Smith, et al., 2006). When applied to the coronavirus pandemic and its impact on the construction sector the mechanism may be used to investigate the causes of risk, its types and the consequences it may lead to (Kochański & Partners, 2020; Oksiński, 2020; Rybarczyk, 2020). From the scientific perspective, the concept of black swans may be employed, i.e. an unprecedented and unpredictable phenomenon which has occurred in the present economic environment, changing the rules of social and business lives, leading to the collapse of previously established standards and challenging the perception of reality (Taleb, 2021). It poses some questions about the nature of the risk and its impact on the economic condition of the entities participating in investment and construction processes.

The key aim of the publication is to present the effectiveness of financial management, taking into account the risks the property development enterprises are exposed to when conducting their business activities in the period of the COVID-19 pandemic. In particular, the paper shows how the developers have adapted to the strict sanitary regime under which they have to operate and how this has affected their management and financial condition in late 2020. The deliberations focus on the analysis and the evaluation of the situation during so-called first and second waves of coronavirus infections. The empirical illustration of this issue are the Polish property development companies, comprised in a portfolio of Silesian Cooperative Bank (Śląski Bank Spółdzielczy „Silesia”) in Katowice, which finances their operations. The developers and financial data presented in the paper are anonymised by using the consecutive letters of the alphabet, from A to K, as names of the organisations. These property development companies carry out projects on the residential real-estate market, mostly in the south of Poland. They include mainly small and medium-sized enterprises acting as developers-investors and developers-contractors. As the evaluations given in the paper concern 11 developers, case studies are used. The discussions, however, are embedded in the general condition of the construction industry in Poland, which is reflected by stock exchange indices such as WIG-Construction and WIG-Developers.

As the theoretical and practical views on these issues can be found in the scholarly literature (Socha, 2000; Dąbrowski, and Kirejczyk, 2001; Gawron, 2006; Siewiera, 2008; Śmietana, and Tworek, 2011; Sitek, 2014; Tworek, and Myrczek, 2015, 2016, 2017), the authors here have chosen to focus on the empirical layer. Nevertheless, the paper is underpinned by the

theory of financial and risk management in the (residential) construction business. It provides an outline of the selected issues in this field, based on a prior review of the literature on the subject matter.

2. Financial management and risk in property development enterprises – case study analyses

All the enterprises which work on real estate development projects are commercial law companies. Four of them are joint-stock companies (spółka akcyjna), while seven have the status of limited liability companies (spółka z ograniczoną odpowiedzialnością). Table 1 presents a list of the developers surveyed, with the general evaluation of their financial standing, provided by banking analysts and controllers working for Silesian Cooperative Bank in Katowice.

Table 1.

A list of analysed real estate development enterprises as of the end of 2020, presenting their general financial standing

| Developer | Legal status | Economic condition | Timely payments |
|-----------|--------------|--------------------|-----------------|
| A | Sp. z o.o. | + | + |
| B | Sp. z o.o. | + - | + |
| C | Sp. z o.o. | + - | + - * |
| D | Sp. z o.o. | + | + |
| E | S.A. | + | + |
| F | S.A. | + | + |
| G | Sp. z o.o. | + - | + |
| H | S.A. | + | + |
| I | Sp. z o.o. | + | + |
| J | S.A. | + | + |
| K | Sp. z o.o. | + | + |

Note. Economic condition: + means good, + - means a deteriorating condition which needs to be monitored (temporary difficulties that pose no threat of going out of business), - means a poor condition which may pose a threat of the developer going out of business. Timely payments: + means good, + - means delays but no threat of debts not being finally repaid, - means the suspension of payments, a potential threat of the debt remaining unrepaid, - * means a delayed repayment of all the debt after the sale of flats in January 2021, past the end of the analysed period. Source: Silesian Cooperative Bank in Katowice, Poland.

As can be seen in Table 1, as many as 75% of the property development companies find themselves in a good or a very good economic condition. Only three of the developers went through some temporary difficulties which, however, posed no threat of those companies going out of business. More importantly, every developer here was able to make timely repayments of their debts which meant the absence of any financial liquidity risk. One developer repaid its loan instalments after due dates but they settled all their liabilities in late January 2021. None of the organisations surveyed experienced any risk of going bankrupt. Furthermore,

none of the companies used any government aid, in form of the anti-crisis shield, which is another proof for their sound financial standing. It should be added that the financial condition of the reviewed enterprises is largely affected by the fact that they operate in the residential real-estate market. This sector had quite successfully gone through the difficult period of adaptation to the execution of projects in the first months of the SARS-CoV-2 pandemic, and the decisions made by the Monetary Policy Council and the National Bank of Poland (the Polish Central Bank) on a significant reduction in interest rates triggered a buying spree on the real-estate market which, in turn, encouraged the developers to start new construction undertakings (Ptaszyński, 2021). These issues should be analysed through the category of interest rate risk (Palmer et al., 1993; Merna, and Al-Thani, 2001; Bunni, 2003; Dallas, 2006; Pike, and Neale, 2003; Burtonshaw-Gunn, 2009). To complete the picture presented above, Table 2 provides some financial performance figures.

Table 2.

A list of selected data on the financial condition of property development enterprises in 2020, in the wake of the second COVID-19 wave

| Developer | Original financing | Net profit | | | | Net profit margin (NPM) | | | | Current ratio (CR) | | | |
|-----------|--------------------|------------|----------|----------|----------|-------------------------|----------|----------|----------|--------------------|----------|----------|----------|
| | | Nov 2019 | Jun 2020 | Sep 2020 | Dec 2020 | Nov 2019 | Jun 2020 | Sep 2020 | Dec 2020 | Dec 2019 | Jun 2020 | Sep 2020 | Dec 2020 |
| A* | 10-20 | 10-20 | 218% | 336% | 187% | 18% | 41% | 47% | 40% | 3.5 | 2.0 | 2.3 | 3.8 |
| B | 5-10 | (-)0 | (-)0 | (-)0 | (+)0 | <0 | <0 | <0 | 3% | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 0-5 | (-)0 | (-)0 | (-)0 | - | <0 | <0 | - | - | 1.1 | 1.1 | - | - |
| D | 5-10 | (+)0 | (+)0 | (+)0 | 230% | 7% | 11% | 13% | 14% | 0.7 | 1.2 | 2.4 | 1.3 |
| E* | 5-10 | 20-100 | 17% | 43% | - | 5% | 2% | 3% | - | 1.7 | 1.9 | 1.7 | - |
| F* | 5-10 | 10-20 | 25% | 25% | - | 7% | 6% | 4% | - | 1.3 | 1.5 | 1.4 | - |
| G* | 5-10 | (-)0 | (-)0 | (-)0 | (+)0 | <0 | <0 | <0 | 44% | 1.9 | 3.8 | 4.6 | 3.7 |
| H* | 5-10 | 10-20 | 9% | 64% | 85% | 24% | 7% | 18% | 14% | 11.4 | 12.4 | 23.7 | 14.0 |
| I* | 5-10 | >100 | 81% | 81% | 89% | 3% | 6% | 3% | 4% | 0.9 | 1.0 | 1.0 | 1.0 |
| J* | 10-20 | >100 | 48% | 63% | 130% | 15% | 9% | 10% | 13% | 3.2 | 2.3 | 2.3 | 2.2 |
| K* | 10-20 | 10-20 | 55% | 83% | 121% | 13% | 15% | 14% | 15% | 4.4 | 6.0 | 4.7 | 4.5 |

Note. * means that a profit is given in comparison to Dec 2019 figure (2019 profit figures in the given period are shown in PLN million); (-)0 and (+)0 means a small loss or a small profit, compared respectively to the previous data; - means no data available. Source: Silesian Cooperative Bank in Katowice, Poland.

When analysing the figures given in Table 2, showing the net profit generated by the developers in the analysed period, it should be noted that in all the cases where such data were available they are at least satisfactory, and sometimes the result is actually quite high. This applies, in particular, to enterprises A, I, J and K. In general, they started with a high amount of owner equity, and they closed December 2019 with a good result which, for organisations I and J, exceeded PLN 100,000,000, allowing them to continue to operate also in the difficult period of spring 2020 (a lockdown). Developers E, F and H, however, look slightly worse in comparison but made up for that by generating a healthy net profit margin and maintaining a good level of financial liquidity. In particular, company H stands out in terms of a strategic approach to management over its financial liquidity (the rate is much higher

than 1). The current ratio it generated is a few times as high as the ones reported by the other developers. Developer K also ranks quite well in Table 2. However, a clear leader here is developer A. During the COVID-19 pandemic this organisation reported a net profit which is almost twice as high as the figure they earned in 2019. They achieved the highest net profit margins, coupled with a very good current ratio, which proves the high effectiveness of their business operations.

Summing up, when looking at the figures given in Table 2 we can see that the vast majority of developers generated positive financial results when closing 2019, in the following three calendar quarters and at the end of 2020. The losses made by some of the entities surveyed were relatively low, compared to their own equity figures or balance-sheet totals and posed no threat to their future existence. The net profit margin, defined in the literature (Brigham, and Gapenski, 2000; Dallas, 2006; Gitman, 2006; Brealey et al., 2007; Hartman, 2007; Minasowicz, 2009; Burtonshaw-Gunn, 2009) as part of revenue from sales, makes a net profit for an enterprise and it is positive for the majority of the enterprises reviewed here; developers A, D, H, J and K reported high or very high values. Their current ratios amounted to 1 or more, which makes their current assets sufficient to cover all their existing accounts payable. Even when faced with temporary losses due to their investment cycle or the materialisation of endogenous or exogenous risks, every developer had enough resources to settle the payments owed to their business partners, employees, to pay their taxes and financial costs. Another important thing here is the fact that no one of the organisations surveyed was subject to any debt collection proceedings or was listed in any Polish debtor databases such as Krajowy Rejestr Długów (KRD), Biuro Informacji Kredytowej (BIK) – BIK-Przedsiębiorca register.

When it comes to the risks which occurred in the analysed period of time, the developers listed in Table 2 had a number of challenges to overcome, i.e. they had to deal with investment and project risks (Boothroyd, and Emmett, 1996; Godfrey, and Halcrow, 1996; Edwards, and Bowen, 2005; Sitek, 2014; Smith et al., 2006; Loosemore et al., 2006). In particular, after March 24, 2020 the following sources of risk were identified as likely to affect their budgets and timely performance of construction projects: first of all, delays in administrative decision-making and in obtaining building or occupancy permits; secondly, a temporary shortage of staff due to COVID-19, e.g. staff being ill or quarantined, foreign workers, mainly construction workers from Ukraine, who had to return to their home country; thirdly, delays in supplies of raw materials, construction materials, prefabricated goods and subassemblies; fourthly, a risk related to the maintenance of high quality levels (the need to find substitutes to replace the materials which were not supplied, time pressure due to the need to deal with the backlog caused by delays); fifthly, a rise in costs of construction projects, resulting from the implementation of guidelines to comply with the sanitary requirements stipulated in the Regulation on COVID-19 pandemic (disinfecting agents, additional protective clothing, keeping social distance, additional sanitary facilities, transport of workers to construction sites) (Regulation, 2020); sixthly, a risk of the failure to meet agreed project delivery dates; seventhly, the difficulties to

obtain funds, encountered by the developers as well as potential buyers of flats on the real-estate market; eighthly, more difficult access to notarial services, problems in customer mobility due to quarantines or social contact limitations (Kochański & Partners, 2020; Oksiński, 2020; Rybarczyk, 2020).

Table 3 below shows a summary of the figures for all the property development companies surveyed, in terms of their net profit and revenue, derived predominantly from sales of flats, and of their funds, such as owner equity.

Table 3.

Summarised financial data for the developers surveyed (in PLN million)

| Net financial result | | | | | Revenue | | | | | Owner equity | | | | |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------------|----------|----------|----------|----------|
| Dec 2019 | Mar 2020 | Jun 2020 | Sep 2020 | Dec 2020 | Dec 2019 | Mar 2020 | Jun 2020 | Sep 2020 | Dec 2020 | Dec 2019 | Mar 2020 | Jun 2020 | Sep 2020 | Dec 2020 |
| 190 | 52 | 83 | 136 | 216 | 1664 | 416 | 890 | 1305 | 1765 | 1035 | 1086 | 1115 | 1162 | 1217 |
| % compared to Dec 2019 | | | | | | | | | | | | | | |
| 100% | 27% | 44% | 72% | 114% | 100% | 25% | 53% | 78% | 106% | 100% | 105% | 108% | 112% | 118% |

Note. In cases when data for December 2020 were not available (C, E, F) the calculations are based on November 2020 figures. Source: Silesian Cooperative Bank in Katowice, Poland.

The net financial result, generated by the entire group of the property development enterprises surveyed in the first calendar quarter of 2020, was 27%, compared to the figure for 2019 (Table 3). An important thing here is the fact that the SARS-CoV-2 pandemic in Poland started to gain its full momentum in the last days of March 2020, i.e. after March 24, and the sanitary restrictions imposed on the construction sector were not as harsh at that time. In the second quarter of 2020 the net profit dynamics weakened slightly; the year-to-date figure was 44%, compared to the entire 2019, but the volume of sales of flats remained at the previous year's level. It may be assumed that a drop in net profit arose from a slight decrease in flat prices. The following calendar quarter of 2020 brought about a notable improvement in the organisations covered by the research. Revenue from sales, from January to September 2020, amounted to 78% of the total value of 2019 sales and the net financial result generated by the companies reviewed here was 72%, compared to the level reached a year before. These data allow us to conclude that the developers managed to maintain their high dynamics of sales of flats and even further intensify their sales on the real-estate market in late 2020. At the same time, they increased their portfolio of projects in the residential real-estate market, with frequent cases of flat prices going up. What's also important here is the value of their owner equity (Table 3). Property development enterprises possess significant financial resources, which totalled more than PLN 1 billion at the end of 2019 for all developers combined. Together with revenues and current ratios reported by the organisations surveyed this constitutes strong evidence that most of the entities enjoyed a healthy financial standing. This also explains why they are so resilient to the materialisation of risks and able to cover their temporary losses. Attention should also be drawn here to healthily balanced financial management policies, pursued by these companies as regards profit retention. Their owner equity figures went up by 18% in 2020. It seems that when faced with a growing uncertainty on the market, property

development enterprises, rather than paying out dividend to their shareholders, are more likely to use their net profit to increase their capital instead. Such accumulation of funds will make it easier for them to scale up their operations in the future, even if the market conditions deteriorate or some temporary losses are made, thus allowing them to continue property development activities. A high level of owner equity, frequently invested in land banking, i.e. parcels of land for potential future investment, makes such organisations still more attractive for lenders.

3. Conclusion

When evaluating the financial condition of the organisations covered by the paper and looking at this issue through the prism of financial and construction risks it should be kept in mind that we will only be able to see a complete picture of the impact that the COVID-19 pandemic has had on the Polish construction industry after a number of years. This is, first of all, due to the very nature of construction and investment processes, as well as the specific characteristics of the real-estate market in Poland but also worldwide. In the period of time under review developers carried out contracts which had been added to their portfolios some two or three years earlier. Nevertheless, in the conditions of the SARS-CoV-2 pandemic, the managerial results achieved by the property development enterprises surveyed show that the economic health and the financial standing of property developers operating on the residential real-estate market after the two waves of the pandemic are surprisingly good, and this market segment also appears to be potentially stable. The current situation in the Polish financial market and an increased risk of inflation, as well as social and mentality changes triggered by the need to work from home offices and limit mobility and social contacts, made the population still more desirous of having their own flats (Kochański & Partners, 2020). This trend is also reinforced by low interest rates set by the Central Bank and a housing packet signed by the President of Poland (Ministerstwo, 2021). Its aim is to intensify the residential construction business and support the industry, which has been affected by the ongoing pandemic, by increasing the funding for council housing projects and for the digitalisation of construction processes (Kochański & Partners, 2020). All these things seem to strengthen and enhance the positive factors in the financial and economic environment of the property development sector in Poland, and contribute to a relatively low business risk (Brigham, and Gapenski, 2000; Young, and Tippins, 2001), when compared to other forms of business activity. Irrespective of that, however, the global COVID-19 pandemic made developers aware of the volatile environment they will be operating in the nearest future, facing a high degree of unpredictability. Here we should also look at the findings of the empirical studies provided by the Polish Association of Construction Industry Employers, which show that in November 2020

as many as 70% of employees worked at their workstations while in April of the same year this figure was just 50% (Koronawirus, 2021). At the same time, 20% of employees worked remotely, compared to 25% earlier on (Koronawirus, 2021). Employees absent from work due to illness or other reasons accounted for approx. 10%, while earlier that figure was 20% (Koronawirus, 2021). On average, 1 employee in every company was quarantined, while previously it used to be 2 employees per company (Koronawirus 2021). There was also a drop in employment of foreign workers – it is about 40%, and in early April 2020 this figure was also 40%; this mainly applies to subcontractors and may have an adverse impact on timely performance of construction projects (Koronawirus, 2021). A problem in finding foreign workers is connected with the procedures related to mobility and accommodation during the pandemic (Koronawirus, 2021).

Therefore, the epidemiological risk is another category which should always be considered when doing research into risks experienced by the construction sector. In many countries worldwide the sudden outbreak of the pandemic made their economies grind to a halt and crippled the entire construction industries. Besides, the predictions about the possible following waves of the COVID-19 pandemic added to the uncertainty of what the future may bring for the projects which are underway. In Poland activities in the residential construction sector continued, with the required sanitary regime having been put in place and the sanitary restrictions being complied with. This does not mean, however, that the construction industry, including property development, has not been affected by an economic crisis caused by the SARS-CoV-2 pandemic. The development of vaccines against COVID-19 and the launch of a vaccination programme have improved the mood among entities operating in the construction sector, allowing the sector to stay optimistic about their nearest future in Poland.

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THE CSR AND GREENWASHING CONCEPTS KNOWLEDGE AND PERCEPTIONS AMONG EMPLOYEES OF POLISH ORGANIZATIONS – A PILOT STUDY

Bartosz ORZEL^{1*}, Radosław WOLNIAK²

¹ Silesian University of Technology, Faculty of Organization and management, Department of Economics and Informatics; Bartosz.Orzel@polsl.pl, ORCID: 0000-0003-1506-4798

² Silesian University of Technology, Faculty of Organization and management, Department of Economics and Informatics, Radoslaw.Wolniak@polsl.pl, ORCID: 0000-0003-0317-9811

* Correspondence author

Purpose: The involvement of enterprises in corporate social responsibility (CSR) reporting is one of the most important aspects of contemporary business ethics. The purpose of the study is to examine the perception and knowledge of employees who work in enterprises declaring and to record their observations in case of CSR, its reporting and greenwashing phenomenon.

Design/methodology/approach: The article presents a pilot study. A partially categorized interview method was used. The interview was divided into three parts: Part I – Employee satisfaction with work in an organization that declares to act socially responsible. Part II is connected to an employee's view of the corporate social responsibility of the organization in which he works. Part III – the concept of corporate social responsibility and greenwashing. Additionally the survey was conducted. All data was collected and conclusions were drawn. The research sample consisted of 10 people who were interviewed and among whom a survey was conducted. All respondents work in enterprises that declare and report corporate social responsibility.

Findings: The vast majority of employees of enterprises are aware of issues related to CSR reporting. They also know the concept of greenwashing. However, the soft aspects related to informing employees about CSR and reporting are problematic.

Research limitations/implications: The main limitation of this paper is research sample, which was 10 respondents/participants of survey/interviews. However, it should be remembered that this is a pilot study that is to initiate research on a larger scale.

Practical implications: The results of the study proposed in the article, which would be conducted on a larger scale, may provide a picture of the insights of employees directly involved in the business process declared as socially responsible. This may allow determining the most important factors for the organization, which determine the satisfaction and commitment to work of people employed in socially responsible enterprises. Also their work efficiency, commitment to building organizational culture and conviction to the values well-established in the company can be improved

Originality/value: On the basis of the literature analysis, it can be noticed that research on the perception of CSR mainly relates to building the non-financial value of enterprises or consumer perceptions/attitudes. On this basis, a research gap was identified in the field of knowledge and

CSR perception and job satisfaction of employees actively participating in socially responsible business processes or CSR reporting.

Keywords: CSR, CSR reporting, CSR perception.

Category of the paper: Research paper.

1. Introduction and literature review

Reporting non-financial data and issues related to their reporting are an integral part of the work of many companies operating in the markets of developed or developing countries. Corporate social responsibility reporting (CSR) is primarily aimed at the public (Buhman, 2013). CSR reporting has become a presentation of activities and efforts undertaken by the company in relation to the environment in which it is located. Key aspects, such as the pursuit of the sustainable development goals, make the company attractive to creditors, customers, shareholders and all stakeholder groups (Knebel and Seele, 2020; Szczepankiewicz and Mućko, 2016; Shauki, 2011). Based on the analyzed literature (Śledzik, 2013; Szczepańska, 2018; Titko and Shina, 2017; Tschopp and Heufner, 2014; Wolniak, 2015, 2018; Fisher, 1995; Mctaggart and Gillis, 1998), it was concluded that the majority of publications and research on CSR reporting concern issues related to the quality of published reports, public opinion, non-financial value of enterprises and their perception by individual groups of stakeholders. A research gap was found in the field of researching the knowledge and perceptions of employees of enterprises declaring and reporting CSR. It is worth considering the role of enterprise employees and their participation in building socially responsible organizations and reporting non-financial data. The organization is primarily people who build its culture, values, and establish and fulfill ethical standards (Lee et al., 2012; Shen and Zhang, 2019).

The presented article focuses specifically on the attitude of employees working in enterprises declaring their social responsibility to the work performed and their observations on CSR in the organization. During interviews and survey authors tried to collect data on the level of respondents knowledge in case of CSR and greenwashing them. Also the topic of greenwashing and its impact on the possibility of publishing less reliable CSR reports was also discussed.

It becomes important to consider aspects related to the comfort of work and overall perception in organizations declaring CSR and reporting corporate social responsibility. During the analysis of the literature focused on employment in enterprises declaring CSR, attention was paid to the involvement of employees. The following types of employees of socially responsible organizations were distinguished due to their attitude to the undertaken work (Rodrigo and Arenas, 2008):

- Accepting of new concept of the organizational social role.
- Identificating with the organization.
- Feel importance of the performing work.
- Having sense of social justice.

In analyzed publication, the division can also be made for attitudes towards the organization and attitudes towards society.

Corporate social responsibility should be present at all organizational levels of the enterprise. This may be ensured by building or rebuilding the foundations of the company's organizational culture, which so far has not been oriented towards socially responsible activities (Lee et al., 2013; Remišová and Búciová, 2012; Costas and Kärreman, 2013; Singhapakdi et al., 2015). On the basis of the analyzed literature, the aspects that turned out to be important from the point of view of a person employed in a socially responsible enterprise were also distinguished. In the analyzed publication the following factors were distinguished (Remišová and Búciová, 2012):

- Compensation issues.
- Health and safety.
- Work conditions and corporate social politics.
- Collective bargaining.
- Work dignity and protection against discrimination.
- Individual work relations and internal communication.
- Enforcing employee rights.

The second aspect that the authors of the publication decided to examine is the awareness of the greenwashing phenomenon, knowledge about this phenomenon, as well as the possibility of its impact on reporting corporate social responsibility. The research gap was identified on the basis of the analyzed foreign and Polish literature (Brazilier and Vauday, 2009; Mahoney et al., 2013; Lee et al., 2018; Wolniak, 2015, 2016; Świątek-Barylska, 2016; Kurpierz, 2020; Wu et al., 2020). It turned out that the published research results mainly concern the impact of greenwashing on CSR reporting, organizational culture and treat greenwashing as a threat to the reliability of CSR reporting.

It is important to pay attention to the knowledge and the employees' perspective on greenwashing in organizations. This is due to the fact that people who create an organizational culture focused on corporate social responsibility should be aware of the possibility of omissions, mistakes and inconsistencies in CSR reporting. It is an important issue for the quality of the resulting CSR reports and the truthfulness of the information presented in them. It should be noted that the knowledge and awareness of CSR, its reporting and greenwashing may turn out to be helpful and make the employees previously engaged in work in their positions a valuable source of data and proposals for improvements in the CSR reporting process in the enterprise, and data processing, as well as their reliable presentation.

2. Research methodology

The methodology of the study was divided into two parts. First of all a partially categorized interview tool. The second part is a questionnaire that employees received after the interview. The interview was structured in such a way that it contained 3 parts. The first two contained 8 thematic areas. Part 3, on the other hand, contained 5 areas. Part 1 focused on employee satisfaction with work in an organization that declares corporate social responsibility. Part 2 is the employees' view and thoughts on corporate social responsibility and its reporting by the organization in which they are employed. Part 3 was referred to as "The concept of social responsibility and the greenwashing phenomenon".

The research sample of pilot study was 10 employees. Participants came from various regions (cities) of Poland. The study was not limited to an enterprise from 1 industry, but 10 people from 10 different enterprises operating in various industries were surveyed. All enterprises declare that they conduct their business practice in a socially responsible manner and report their corporate social responsibility. Table 1 presents issues raised during different parts of the partially categorized interview.

Table 1.
Issues discussed during 3 parts of interview

| Interview | |
|--|---|
| Part | Issues |
| Part I – Employee satisfaction with work in an organization that declares socially responsible activities. | <ol style="list-style-type: none"> 1. Industry and job position. 2. CSR and the employee – benefits for people employed in enterprises declaring their social responsibility (general focus on the issue). 3. CSR and family – benefits/approach/additional benefits/help/flexibility of working time for employees of enterprises declaring their social responsibility. 4. CSR and personal development – opportunities for personal development, and work in enterprises that declare their social responsibility. 5. CSR and professional development – the possibility of developing your professional interests and involvement in work in a socially responsible organization. 6. CSR and assistance in acquiring and deepening hard and soft skills of employees. 7. CSR and fair remuneration for work. 8. CSR and work atmosphere – relations with superiors, colleagues, issues related to counteracting mobbing. |
| Part II – Employee's view on the corporate social responsibility of the organization in which they work. | <ol style="list-style-type: none"> 1. Declaration of corporate social responsibility and the subjective feeling of the company's organizational culture. 2. Direct translation of the declared corporate social responsibility of the organization into the welfare of employees. 3. Employee awareness and satisfaction of participating in a socially responsible business process. 4. Employee involvement in the implementation of the sustainable development goals and their knowledge. 5. Additional obligations for the employee resulting from the implementation of the sustainable development goals by the organization. 6. Employee participation in CSR reporting in the enterprise (Yes/No, role in creating the report – collecting data, reporting the results of the organizational unit in which the employee is employed). 7. Trainings, lectures, broadening the knowledge on the awareness of corporate social responsibility and its reporting in the enterprise. 8. Observations and comments on reporting non-financial data in enterprises. |

Cont. table 2.

| | |
|---|---|
| Part III – CSR concept and greenwashing | <ol style="list-style-type: none"> 1. Knowledge of the concept of greenwashing. 2. Knowledge of greenwashing strategies, forms and tools. 3. The impact of greenwashing on corporate social responsibility reporting. 4. Examples of greenwashing. 5. CSR reporting as a tool for promotion and advertising of the enterprise. 6. Greenwashing as a way for companies to gain unfair competitive advantage. |
|---|---|

Source: authors' own work.

The next step was to ask each participant to fill in the questionnaire, the empty form of which is presented in table 2.

Table 2.
The project of survey questionnaire

| Metrics | Survey questionnaire | | | | | | | |
|--|---|-------------|------------|-----------------------------|------------------|-------|---|---|
| | Male | | Female | | | | | |
| Gender | Base school | | Mid school | | University | | | |
| Education | | | | | | | | |
| Workplace | | | | | | | | |
| Type of workplace | | | | | | | | |
| City | | | | | | | | |
| Survey | | | | | | | | |
| Are you familiar with the corporate social responsibility (CSR) term? | Yes | | | No | | | | |
| Where did you meet this term for the first time? | During lessons | In internet | In media | I was told by my colleagues | Neither of these | Other | | |
| Which of presented definitions describing the term of CSR most accurate? (please mark in scale 1 to 5 where 1 – not accurate, 5 – most accurate) | This is only part of their promotion. | | | 1 | 2 | 3 | 4 | 5 |
| | In this way they try to distract the society from problems and breaking the law in the company. | | | 1 | 2 | 3 | 4 | 5 |
| | They realize that a purely economic approach to business is not enough to be successful in today's world. | | | 1 | 2 | 3 | 4 | 5 |
| | Companies are sensitive to social needs. | | | 1 | 2 | 3 | 4 | 5 |
| | It is hard to describe | | | 1 | 2 | 3 | 4 | 5 |
| Do you pay attention to whether the product you are buying meets the safety standards? | Never | | | | | | | |
| | Rarely | | | | | | | |
| | Often | | | | | | | |
| | Always | | | | | | | |
| In your opinion, companies engage in social activities because (please mark in scale 1 to 5 where 1 – it is not the reason, 5 – it's the important reason) | This is only part of their promotion. | | | 1 | 2 | 3 | 4 | 5 |
| | In this way they try to distract the society from problems and breaking the law in the company. | | | 1 | 2 | 3 | 4 | 5 |
| | They realize that a purely economic approach to business is not enough to be successful in today's world. | | | 1 | 2 | 3 | 4 | 5 |
| | Companies are sensitive to social needs. | | | 1 | 2 | 3 | 4 | 5 |
| | It is hard to describe | | | 1 | 2 | 3 | 4 | 5 |

Cont. table 2.

| | | | | | | |
|--|---|---|---|---|---|---|
| What are, in your opinion, the main reasons for breaking ethical principles in business? (please mark in scale 1 to 5 where 1 – it is not the reason, 5 – it's the important reason) | Fierce competition | 1 | 2 | 3 | 4 | 5 |
| | Bad regulations | 1 | 2 | 3 | 4 | 5 |
| | Lack of positive role models | 1 | 2 | 3 | 4 | 5 |
| | No public opposition | 1 | 2 | 3 | 4 | 5 |
| | Too little publicity of unfair behavior of companies in the media | 1 | 2 | 3 | 4 | 5 |
| | Willingness to make easy and quick profit | 1 | 2 | 3 | 4 | 5 |
| Does your company carry out any of the following activities? | Philanthropic activities | 1 | 2 | 3 | 4 | 5 |
| | Employee volunteering. | 1 | 2 | 3 | 4 | 5 |
| | Activities for environmental protection. | 1 | 2 | 3 | 4 | 5 |
| | Actions for equal opportunities. | 1 | 2 | 3 | 4 | 5 |
| | Engaging in social campaigns. | 1 | 2 | 3 | 4 | 5 |
| | Cooperation with non-governmental organizations. | 1 | 2 | 3 | 4 | 5 |
| Size of enterprise | Micro: 1-10 employees Small: 10-50 employees Medium: 50-250 employees Large: more than 250 employees | | | | | |
| Brands | Same as in interviews | | | | | |

Source: authors' own work.

The issues for the interviews and the questionnaires prepared in this way were conducted among the survey participants. Subsequently, the obtained results were compared and the data were analyzed.

3. Results

10 participants took part in the study. Five women and 5 men. Four people had secondary education, while 6 – higher education. Seven participants were 20-30 years old. They were young and professionally active people. One person aged 40-50 and 2 people aged over 50. Below in table 3 there is a list of the cities where the workplaces of the people participating in the interviews and survey were located.

Table 3.
Cities and brands/workplaces, where participants work

| City | Voivodeship | Amount of participants | Brand |
|----------------------|---------------|------------------------|---|
| Gliwice | Upper Silesia | 3 | Automotive, Healthcare, Energetics |
| Siemianowice Śląskie | Upper Silesia | 1 | Recycling |
| Tarnowskie Góry | Upper Silesia | 1 | Game industry (software development) |
| Kraków | Małopolskie | 1 | Services (telemarketing) |
| Radomsko | Łódzkie | 1 | FMCG (Fast moving Consumer Goods – trainee) |
| Warszawa | Mazowieckie | 1 | Finances (data mangement specialist) |
| Pilzno | Podkarpackie | 1 | Logistics and Transport (manager) |
| Wrocław | Dolnośląskie | 1 | Healthcare |

Source: authors' own work.

3.1. Results of interviews

In the course of the conversation related to the first part of the interview, the following questions were asked within the selected areas:

- Do you derive any benefits, apart from financial, from working in a company that engages in socially responsible activities?

To this question, only 3 person replied that they felt satisfaction with the actions taken. Others were rather skeptical about this issue. According to them, they do not receive any non-financial benefits.

- Do you think there are any additional benefits (apart from financial) for people employed in socially responsible enterprises?

Eight of 10 participants answered that yes, there are benefits for people working in socially responsible enterprises. The most common answers were simply "personal development", "widening horizons"

- Does the company you work for provide additional opportunities for personal development (sport, pursuit of passion, etc.)?

Seven out of 10 interviewees answered positively. Most often, enterprises help to pursue interests related to sport. Another area is language courses, non-vocational technical training, etc. Positive responses came from people working in the following industries: Automotive, Recycling, Energetics, Services, FMCG, Software development, Finances.

- Does the company you work for, offer career development opportunities (promotion, training, etc.)?

During the conversation on this subject area, all participants responded positively. In all sectors (enterprises) presented in this study, there is a possibility of promotions, training, etc. employees were enthusiastic about professional development in their companies.

- Does the company you work for offer employees fair remuneration for work and commitment to the development of the company?

In most cases, 7 out of 10 participants felt they were receiving decent wages. 1 person was not sure if they were properly and adequately remunerated for their involvement in the work and development of the enterprise, while 2 persons were completely dissatisfied with the amount of remuneration received for their work. These were the sectors: Medical and financial. An employee in the transport sector (logistics) was more or less satisfied with the amount of salary received.

- Does the company you work for offer a friendly atmosphere for employees and appropriate relations with superiors (no mobbing etc.)?

In the vast majority of 9/10 cases, employees replied that they were satisfied with the relationship with their superiors and the atmosphere at work. The healthcare worker had a different opinion. In his opinion, mobbing is prevalent at work and his workplace is solely income-generating.

The second part of the interviews was focused on the employee's perception of the corporate social responsibility of the organization in which they are employed and participation in its reporting. Below are the questions that were asked within the individual thematic areas and the answers of the interviewees:

- In your opinion, is an enterprise declaring socially responsible activities characterized by a more developed and better established organizational culture of the enterprise?

Eight out of 10 respondents answered this question unanimously. On the other hand, 2 people (healthcare and software development) denied it.

- Do you feel satisfied with participating in business processes declared socially responsible?

Six out of 10 people said yes, they had some satisfaction from participating in business processes. On the other hand, 4 people did not feel satisfied with this fact. These people work in enterprises belonging to the following industries: energetics, healthcare providing, software development, finances.

- Are you aware of and committed to the implementation of the sustainable development goals in the enterprise where you are employed? (if so, please specify what these goals are)

Half of the interviewees (5 of 10) admitted that they are consciously committed to the implementation of the sustainable development goals or actions undertaken by the company. An automotive industry employee talked about the reduction of scrap, the logistics and transport manager is involved in climate protection, the recycling specialist knows that his company is involved in building a circular economy. A service sector employee knows that the company is committed to protecting the climate and the environment. On the other hand, an FMCG employee is involved in an action carried out by his company aimed at reducing the amount of waste – in particular, transport packaging.

- Have any additional duties in your position resulted from your company's involvement in corporate social responsibility?

Only 1 person from among the respondents claims that additional obligations related to corporate social responsibility resulted for them - this is an increased number of documentation (health care sector).

- Was you or your organizational unit in the company responsible for the preparation of the CSR report or its fragment (data, etc.) in the company?

Only 1 person from among the interviewees - an employee of a recycling company is aware of the participation of their organizational unit in CSR reporting. An additional duty of the employees was to collect and provide data.

- Does your company run an educational or reporting campaign for employees?

Eight out of 10 employees replied that their company does not run any information campaign for employees that would be related to the implementation of the sustainable

development goals or CSR reporting. The only industries among the surveyed whose employees declared that they are informed about issues related to CSR and its reporting are: recycling and healthcare.

- Do you have any additional insights on CSR reporting?

None of the respondents wanted to say anything about the topic of the conversation.

In the 3rd part of the interview, participants were asked about their knowledge of the concept of greenwashing and their opinions on the impact of this phenomenon on the reliability of CSR reporting. The following questions were asked and answers were taken:

- Do you know the concept of greenwashing?

Six out of 10 respondents replied that they knew the concept of greenwashing. People employed in automotive, FMCG, service and software development industries did not have knowledge of this concept.

- Do you know the forms, tools and strategies of greenwashing?

Most of the people participating in the study (8) were not familiar with this subject. 1 person tried to mention several forms of greenwashing. However, they did not know the strategies and tools. In turn, the second person was able to categorize the given examples (hints), but could not name these things by themselves.

- Do you think that practicing greenwashing may affect the falsification of corporate social responsibility reports submitted by enterprises?

Six out of 10 people answered during the interview that greenwashing may be the cause of incorrect and unreliable CSR reporting. People from the automotive, healthcare, FMCG industries did not know whether the greenwashing phenomenon could adversely affect CSR reporting. A service worker argued that greenwashing did not affect non-financial reporting.

- Can you give any examples of greenwashing?

An employee of the transport industry gave an example of documentation issued electronically under the guise of caring for the environment, when in fact it is about saving. A worker in the recycling industry pointed out gluten free corn flakes, while corn is gluten free. A health worker identified organix shampoos and some eco-pea producers. The rest of the interviewees were not able to give an example of greenwashing.

- Do you think CSR reporting can be a tool for promoting and advertising a company?

7 out of 10 respondents answered that CSR and its reporting can be used as an element of enterprise promotion. Only 3 respondents from the sectors of finance, software development and services denied.

- Do you think greenwashing is a way for companies to gain an unfair competitive advantage?

7 out of 10 respondents answered that greenwashing serves to unfairly gain a competitive advantage of the company. Only 3 respondents from the services, FMCG, and automotive industries denied.

- Does your company run an information campaign on greenwashing/does it declare activities free from unfair business practices, etc.?

All interviewees denied it.

3.2. Survey results

Table 4 summarizes the results obtained in survey conducted after the interviews. The participants, age structure, gender etc. are the same as for the interviews. The number of votes is given in brackets.

Table 4.
Survey results

| Survey | | | | | | | | |
|--|--|-------------|--------------|---------------------------------|----------------------|-------|-------|-------|
| Are you familiar with the corporate social responsibility (CSR) term? | Yes (6) | | | No (4) | | | | |
| Where did you meet this term for the first time? | During lessons (3) | In internet | In media (1) | I was told by my colleagues (1) | Neither of these (5) | | Other | |
| Which of presented definitions describing the term of CSR most accurate? (please mark in scale 1 to 5 where 1 – not accurate, 5 – most accurate) | Striving to maximize profit. | | | 1 (3) | 2 (2) | 3 (2) | 4 | 5 (3) |
| | The pursuit of profit in accordance with the applicable law and ethics. | | | 1 (1) | 2 (1) | 3 (2) | 4 | 5 (6) |
| | Conducting business in accordance with the principles of ethics and commercial activities of a nature pro-social and pro-ecological. | | | 1 (1) | 2 (1) | 3 (2) | 4 | 5 (6) |
| | Running a business in accordance with the rules, ethics and building long-term relationships with environment. | | | 1 (1) | 2 (1) | 3 (2) | 4 | 5 (6) |
| Do you pay attention to whether the product you are buying meets the safety standards? | Never (2) | | | | | | | |
| | Rarely (1) | | | | | | | |
| | Often (6) | | | | | | | |
| | Always (1) | | | | | | | |
| In your opinion, companies engage in social activities because (please mark in scale 1 to 5 where 1 – it is not the reason, 5 – it's the important reason) | This is only part of their promotion. | | | 1 | 2 | 3 (2) | 4 | 5 (8) |
| | In this way they try to distract the society from problems and breaking the law in the company. | | | 1 (2) | 2 (2) | 3 (2) | 4 (1) | 5 (3) |
| | They realize that a purely economic approach to business is not enough to be successful in today's world. | | | 1 | 2 | 3 | 4 (2) | 5 (8) |
| | Companies are sensitive to social needs. | | | 1 (4) | 2 (4) | 3 (1) | 4 (1) | 5 |
| | It is hard to describe | | | 1 (7) | 2 (3) | 3 | 4 | 5 |

Cont. table 4

| | | | | | | |
|--|---|-------|-------|-------|-------|-------|
| What are, in your opinion, the main reasons for breaking ethical principles in business? (please mark in scale 1 to 5 where 1 – it is not the reason, 5 – it's the important reason) | Fierce competition | 1 | 2 | 3 (3) | 4 (5) | 5 (2) |
| | Bad regulations | 1 | 2 (3) | 3 | 4 (4) | 5 (3) |
| | Lack of positive role models | 1 | 2 | 3 (5) | 4 (4) | 5 (1) |
| | No public opposition | 1 (2) | 2 | 3 (1) | 4 (1) | 5 (6) |
| | Too little publicity of unfair behavior of companies in the media | 1 | 2 (2) | 3 | 4 (1) | 5 (7) |
| | Willingness to make easy and quick profit | 1 | 2 | 3 | 4 (2) | 5 (8) |
| Does your company carry out any of the following activities? | Philanthropic activities | 1 (2) | 2 (3) | 3 (3) | 4 | 5 (2) |
| | Employee volunteering. | 1 (6) | 2 | 3 (3) | 4 (1) | 5 |
| | Activities for environmental protection. | 1 (4) | 2 (1) | 3 (2) | 4 | 5 (3) |
| | Actions for equal opportunities. | 1 (3) | 2 (3) | 3 (4) | 4 | 5 |
| | Engaging in social campaigns. | 1 | 2 (3) | 3 (5) | 4 (2) | 5 |
| | Cooperation with non-governmental organizations. | 1 (3) | 2 (2) | 3 (5) | 4 | 5 |
| Size of enterprise | Micro: 1-10 employees (1) Small: 10-50 employees Medium: 50-250 employees (6) Large: more than 250 employees (3) | | | | | |
| Brands | Same as in interviews | | | | | |

Source: Authors' own work.

4. Conclusions and discussions

By analyzing the data collected during the interviews, you can learn many interesting things about the insights of employees working in organizations declaring CSR. First of all, employees are rather aware of the benefits for them of declaring CSR by enterprises. Most employees see an opportunity for personal development or broadening their horizons. Many companies facilitate the realization of sports passions, family entertainment, etc. Most often it takes place in plants dealing with recycling, automotive, energetics, services, FMCG, software development and finances. However, it is worth paying attention to the fact that employees often do not notice (are they indifferent?) these activities and benefits in the enterprises in which they work. They are aware of them, know about the idea itself and possible benefits, but do not notice them in the enterprise, where they actually work. Perhaps the frequency of these activities is too low, or they are only declarations and promises made to employees and written in CSR reports. It is also likely that the people taking part in the survey are not interested in such activities. Due to the low research sample, it is impossible to say. It is noteworthy that, according to the employees participating in the interviews, there are considerable opportunities to fulfill their own professional ambitions and expand their competences. It is also important that 7 out of 10 participants are satisfied with decent remuneration for work declared by the companies they work for. Among the interviewees, only 1 person complained about the atmosphere in their workplace (mobbing).

Part 2 of the interviews showed that employees believe in a better developed organizational culture of enterprises declaring CSR. They are also able to trust the employer who declares that they run their business in a socially responsible manner. The feeling of "higher" organizational culture of enterprises translates into satisfaction and contentment with work. More than half of the interviewees said they were more satisfied with participating in socially responsible business processes. Half of the interviewees are aware of and can name the activities they undertake at their workplace or which are undertaken in their organizational unit to achieve the goals of sustainable development. Only 1 person acutely felt the imposition of additional CSR obligations and was not satisfied with this fact. Also 1 person was assigned an additional task related to CSR reporting by the company he works for. Unfortunately, the study shows that it is much worse in terms of soft aspects related to CSR and its reporting. 8 out of 10 employees say that their companies do not run any information campaigns for employees. They do not inform about the actions taken to create non-financial value of the enterprise, they do not explain why such actions are taken, nor what are the objectives currently being implemented by the enterprise in this respect. There are also no campaigns to inform or promote reliable CSR reporting.

The interviews also showed that despite partial knowledge of the greenwashing phenomenon, employees are not able to name its forms, strategies used by the company or tools. The interviews showed that employees try to respond more by sensing the subject than using knowledge in this area. Their opinions were also divided regarding the possible impact of greenwashing on the reliability of the resulting CSR reports. There is also a problem in the aspect of training, education in reliable reporting of non-financial data and gaining a fair competitive advantage.

Analyzing the results of the survey, it can be seen that 6 out of 10 people are familiar with the concept of CSR. The staff found that:

- "The pursuit of profit in accordance with the applicable law and ethics ", " Conducting business in accordance with the principles of ethics and commercial activities of a nature pro-social and pro-ecological "and" Running a business in accordance with the rules, ethics and building long-term relationships with environment "best describe the term" corporate social responsibility".
- Six out of 10 respondents pay attention to signs regarding compliance and safety placed on product packaging. Eight out of 10 respondents believe that commitment to corporate social responsibility results from the desire to promote companies and a purely economic approach today It is not enough to be commercially successful.
- According to employees of socially responsible enterprises, fierce competition, lack of positive models on the market, insufficient publicity of dishonest behavior and lack of public opposition, as well as the desire to make easy and quick profit, are the most common reasons for breaking ethical principles in business.

Analyzing the subject of employee involvement in reporting non-financial data, it is worth noting that there is not much research on this issue. Similar publications in this regard concern job satisfaction in relation to CSR in conjunction with the age of employees (Wisse, 2018). Another interesting issue is the attempt to create a model expressing the correlation between CSR practices within the company and employee satisfaction (Vinerean et al., 2013). It can therefore be said that the issues combining job satisfaction and CSR are not new, but usually focus on narrow and selected aspects of such. In the presented publication, it was decided to try to obtain more information by sending questions directly to employees (interview) and by supplementing them with a questionnaire survey. The proposed pilot study may be repeated in the future with the use of a more extensive survey and addressed to a larger group of respondents. Then the results will be much more reliable.

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MANAGEMENT – BETWEEN ECONOMY, POLITY, AND ETHICS

Barbara PRZYBYLSKA-CZAJKOWSKA

Silesian University of Technology, Faculty of Management and Organization, Gliwice; bprzybylska@polsl.pl,
ORCID: 0000-0001-8028-1188

Purpose: The author of this text shares the opinion (expressed by quite a number of social researches) that the practical impact of social sciences on social practice, and particularly – on mankind’s responding to the global challenges, is not satisfying. Enhancement of this influence can be viewed as one of these challenges. An analysis of the causes of the situation characterized above is required to achieve this goal. Such an analysis is outlined in this text and some its tentative practical implications are indicated. In other words, it could be said that the goal of this paper is to contribute to the debate on the current state of the management studies and management education.

Design/methodology/approach: This text belongs to the area where meet the philosophy of social sciences and their history. Thus, this text is based on historical description and on analysis of the described processes. Logical analysis connected with explication of axiological (ethical) assumptions allows to formulate some practical suggestions as to the further development of management studies and the (academic) education of the future managers.

Findings: The role of the emerging interdisciplinary theory of collective action – as basis for both research and academic education in practically oriented social sciences – has been exposed and justified in this text.

Research limitations/implications: Further historical and analytical studies seem to be necessary.

Practical implications: Some changes in the organization (defining research problems, methodologies etc.) of the research practice of social sciences in general, and of management studies in particular, as well as changes in studies programs might be planned and accepted if arguments presented in this paper are at least partly convincing.

Social implications: The text, suggesting and inspiring some changes in the education of managers, might also have some indirect impact on the quality of politics, self-government, or civil-society organization.

Originality/value: The paper contains an idea of management studies as an interdisciplinary science connecting elements of traditional management theory with sociology, political sciences and economics. The idea, and also its justification, seems to be rather new. The paper is addressed to the representatives of various social sciences interested in interdisciplinary cooperation.

Keywords: social sciences, sustainability, governance, collective action.

Category of the paper: Viewpoint.

1. Introduction

When do „our times” begin? – A few answers are acceptable. “The year 1945” is one of them. But also this short answer can be interpreted in several ways. So let’s be more specific and say that “our times” began on August 6, 1945 – with the dropping of atomic bomb on Hiroshima. Formulating this opinion we follow Jean Paul Sartre who declared – in October 1945, in the first issue of “*Les Temps modernes*” – that “mankind: if it continues further its existence, it is not because it was born, but because it has decided to continue its existence.” (cited after Picht, 1969) Some 75 years have passed and, happily, we have avoided nuclear disaster. From the perspective of an individual’s life, 75 years is a rather long period of time; from the perspective of modern history – rather short, and from the perspective of the global history started with the Neolithic Revolution – just very short. Too short to justify the opinion that the threat of nuclear disaster has definitely disappeared.

Some twenty years later a new, and much more urgent, threat emerged: the threat of ecological crisis. Contrarily to the tragedy of Hiroshima (and Nagasaki), in the case of that crises no single event can be regarded as playing a role similar to the dramas in Japan. We should rather indicate the moments in which mankind began to realize the dangers generated by the dramatic side-effects of the uncontrolled economic growth. Having no place and time to outline the history of the contemporary ecological consciousness, let us mention but two events. First: the publication (1962) of “*Silent Spring*” – a book of Rachel Carson, a book that played a significant role in the development of environmental movements and in the creation of the U.S. Environment Protection Agency. And second: the Stockholm United Nations Conference on the Human Environment (1972).

Both, the actual ecological drama and the potential nuclear tragedy, are the source of the beliefs of the possibility of total self-destruction of mankind (the human civilization). Such pessimistic opinions are formulated very often by “professional Cassandras”. But they are also expressed by serious and prominent scientists. By way of example only, let’s invoke Martin Rees (a prominent British cosmologist and astrophysicist), who claimed that mankind has only 50% chances to survive until 2100 without a tragic catastrophe (Rees, 2007).

Probably many (most?) of us hold more moderate (less catastrophic) views on the future of mankind. Even so, most of us agree that – firstly – humanity faces great many serious problems (challenges) of a global (i.e. affecting the whole mankind and solvable by all mankind only) character, and – secondly – responsible for solving them are we all (albeit, it should be stressed, to a very different degree: responsibility of policy-makers, say, is obviously much greater than that of hard working workers). – Formulating this opinion we can rely on the very profound analyses contained in the “*Global Catastrophic Risks*”, and – in particular – on the general overview (Bostrom, Circovic, 2008), on the text devoted to “*The continuing threat of nuclear war*” (Circicione, 2008) and on the one concerning climate change (Frame, Allen, 2008).

The rise and development of global problems (challenges) is, according to the perspective assumed here, part and parcel of the complex process composed of various social and civilizational (sub-) processes, a process that can be called – globalization. Viewed from this perspective, the process of globalization is also co-created by another (sub-)process: by the process of the increasing complexity of the global natural-technical-social system (= Earth together with all living creatures, with all man-made objects, and with humans – with their thoughts, emotions etc.). Two important issues should be underlined here: First, the complexity of the system makes also the global problems (challenges) more complex, so – more difficult to be solved. Second, the more complex is an object the more complex should be its model (even if – as any model – is always a simplification); in other words: the more complex an object the more difficult is gaining sufficiently adequate knowledge about it (Czajkowski, 2015).

Now, a few words are to be said about processes which at least partly overlap those co-creating globalization but can or rather, as any other, even has to be (at a phase of researches) studied autonomously. We mean here the processes which could be described as “the rise of society of organizations”. Schematically put, the process of dynamic development of organizations started at the second half on 19th century, the turn of centuries brought about acceleration of this process, and the end of the Second World War added still more impetus. To describe this process in both succinct and emphatic way, one might say about the evolution of the “world of organizations”: on one hand – the growth of the sheer number of organizations (today there are approximately 15 000 only of international organizations), on the other – the increasing variety of types of organizations (economic, political, scientific, sport; more or less specialized).

The analysis of this process should be, in the author’s opinion, regarded as comprising the process of institutionalization: institutions can (or, perhaps, even should) be regarded as organizations (of more or less specific character).

The above considerations might be summed up in the following way: The possibly adequate responses to the global challenges depend – *inter alia* – on the quality of organizations. So the problematics of the quality of organizations turns out to be still more significant than it is commonly assumed.

Ending this introduction, let us recall the famous phrase (attributed to David Browder or Rene Dubos or Jacques Ellul): “Think global, act local”. It could be also suggested that its interpretation different from the “geographical” (“territorial”) one – an interpretation that could be called “structural”: one in which the word “global” refers to the whole (natural-technical-social) system while “local” denotes a part of it – is possible and useful. This interpretation suggests that if we accept that global challenges are both serious and urgent, we should also agree that we have responsibilities related to these challenges. These responsibilities are of various kinds; they are connected with various social roles we play: of parents, citizens, members of local communities...And of a person playing a professional role (or roles).

In particular: the role of a researcher (social scientist) and/or the role of (academic) teacher of social sciences. And to be still more specific: the role of researcher and/or teacher in the field of management studies.

Let us add to the said above: For the last four decades or so business ethics – a discipline belonging to the “border area” of philosophy and management studies (Griseri, 2013; Koslowski, 2010) – has been dynamically developing. Ethicists have emphasized, and rightly so, that business activities – in more and more complex world – originate many serious moral problems (Przybylska-Czajkowska, 2019b). But this situation is not specific for business (or medicine - profession since ancient times connected with ethics). In particular, Hiroshima 1945 gave rise to the ethics of science (Agazzi, 1997). Connected with ethics of globalization (Jonas, 1984; Singer, 2002) should deliver fundamentals for a sub-field of business ethics: ethics of research in and teaching of management studies. The present text is intended (partly) as a contribution to the reflection of this type.

2. Economy, polity, and culture – some remarks on social ontology

2.1.

Let us start this chapter from some general considerations on knowledge and its development. Since it is a huge subject (knowledge – in this or that form – has been a part of all history mankind, and – in a sense – perhaps also of some animal species) and not all its elements are very important for the discussion of issues to be undertaken in this chapter, let us limit ourselves to this epoch that begins around 25 centuries ago – in the time of Thales. But just about this epoch a lot could (and in other context: should) be said. Here, it is neither possible, nor – fortunately – necessary. So, but a five points on this issue will be formulated here. First, in this very epoch a considerable part of knowledge has been consciously produced: texts containing knowledge have been written, writing these texts has been becoming a profession, and this branch of activity (it might be even said: production) – more and more institutionalized. Second, from the very beginning of this epoch, the development of knowledge (about the Universe, life, history etc.) has been accompanied by the reflection (more or less elaborated) on knowledge – on its nature, methods of its acquiring, limits, etc. Third, as the result of the increasing amount of knowledge (to mention but the simplest though important factor) knowledge has been dividing into disciplines, sub-disciplines etc. Fourth, the history of science(s) is – in some respects – similar to the political history; in particular: the borders between intellectual domains have been changing (Dogan, 1995). Fifth, as a reaction to the growing specialization – some call it “Balkanization” of scientific disciplines (Wallerstein,

2001), some trends towards interdisciplinarity (transdisciplinarity, multidisciplinary...) have in the last decades emerged (Weingart, 1995; Weingart, 2000).

These five notes should serve here as a backcloth for considerations on the development of knowledge about social world. Also to this subject a long paper (or even a book) might be devoted. So, again, a few brief comments on the issues that seem to be of particular significance for further considerations will be added. First, the history of social thought starts from Plato and Aristotle. The tradition they initiated – tradition of political and social philosophy (the last word does matter in this context) – has been continued until our days. Second, social sciences (as distinguished from social philosophy) are, compared with natural sciences, relatively “young”: Galileo Galilei (1564-1642) is generally considered to be the “father” of modern physics – the central part of modern empirical natural sciences (let’s add that Newton’s “Principia” – one of the greatest works in the history of world culture, containing a theory that has been and, almost for sure, will be in the future taught at schools – was published in 1687), and one hundred fifty years younger Adam Smith (1723-1790) is regarded as the “father” of economics – the first autonomous social science. Sociology is still younger: Even if we accept August Comte (1798-1857) as the “father” of this discipline – due to his invention of its name announced in 1835. But, except for this invention, he contributed very little to this science. According to the most widely accepted opinion, Emile Durkheim (1858-1917) and Max Weber (1864-1920) were the first great sociologist – in the strict sense of the word. The opinion that sociology became an autonomous science in the last quarter of the 19th century seems to be rather soundly justified. And just in about the same time political sciences came to the academic fore. It should be noted that the last discipline was originated in the United States and only later “imported” to Europe; interestingly, the establishing this new discipline was much more collective and institutional initiative than it had been in the case of economics and sociology. (Woodrow Wilson [1856-1924] – one of the scholars who played a significant role in creating this discipline – is much more known as making politics than researching it.) Third, three social sciences that can be, more or less precisely, characterized as theoretical social sciences, have been listed above. However, we should not forget that history, often counted to humanities (considered by many as an academic domain different from social sciences), shares with social sciences its object of study, at least if sufficiently broadly defined. The same can be said about such disciplines as ethnography/ethnology, and social and cultural anthropology.

Separately, let us say some words on management studies. This domain came into existence as a response to the changes and demands of economy at the turn of 19th and 20th centuries. To these transformations a book might be devoted. But analysis of them is not our goal here. So only two – both important and symbolic – events will be mentioned. First: In the year 1870 John D. Rockefeller (1839-1937) founded Standard Oil Company – one of the first great corporations (not only the organizational form but also the area of activity – oil – does matter). And second: a period of time – few decades later, between 1907 (when the first Model T was

produced) and 1913 (when in Motor Ford Company the assembly-line was launched) is to be mentioned here. In short: both profound organizational and technological changes.

The reaction to these changes was instant: In the United States the first business school – active still today, and one of the most respected – Wharton Business School – was founded in 1881. Interestingly, in Europe at that time a few such schools had already existed; among them – Budapest Business School founded in 1857 – it exists still today (Adams, 2008)

If management studies were to have a “father”, it would almost certainly be Frederic W. Taylor (1856-1915) – the author of a book “The Principles of Scientific Management” (1911); one of the very few persons who gave his name to a (philosophical, ideological, scientific...) trend: Taylorism – the first “school” or paradigm in this domain. While speaking about origins of this fields we should also mention Henri Fayol (1841-1925). Though he was older than Taylor, his most important work “Administration industrielle et general” was published one year after Taylor’s death and its English translation – in 1949. To the two important thinkers one should add Karol Adamiecki (1866-1933) – the pioneer in Poland of the theory of scientific organization and management. It should be stressed that Taylor, Fayol and Adamiecki were engineers, not only by training: they performed – with successes – their profession.

Ending this part of our considerations: At least one person from outside the management studies should be invoked: Max Weber, the great German sociologist, a few years only younger than F.W. Taylor. He studied great many problems and created an impressively great set of theoretical ideas. Out of them but one theory should be mentioned here: Weberian theory of bureaucracy. A detailed comparison of the Taylor’s and Fayol’s theory would require a separate text. Be here the reader’s attention draw to the analogy that can be best characterized by a reference to one of the Garreth Morgan’s metaphors, namely to that of organization as a machine (Morgan, 2006).

2.2.

The situation of social sciences is paradoxical: One can risk the hypothesis that the “internal border-lines” divide the domain of social sciences into numerous areas – areas that are more like and more connected than various areas of physical or mathematical sciences. But the “internal border-lines” dividing the latter two domains seem to be much less important (for the physicist and mathematicians; note the names – still in constant use!) than those crosscutting the domain of social sciences. This situation has its far-reaching, and – it can be supposed – mainly negative consequences for researches in social sciences and teaching them (Czajkowski, 2015).

And if we believe, as the author has declared in “Introduction”, that the development of social sciences is – due to the global challenges –urgently needed, and that the internal borders separating them slow it down and make it more difficult, we should ask how to minimize the role these border play. Analysis of the mechanisms that created these boundaries and contribute to their reproduction should help to achieve this goal.

There is no doubt that all sciences (be it physics or sociology, history or biology, etc., etc.) are being developed by social groups. Some, if not all, of these groups deserve the name of “communities”. And, as in the case of all communities, in the reproduction of those groups important part play their historical traditions defining their (in this case: professional) identities. As I suggested above, the borders seem to play in social sciences more significant role than in the other domains. Why? – This question seems to be very important.

It can be assumed that the quest for an answer should begin from the problem of the relations between social sciences and ideologies. It is a large subject – very controversial, often hotly debated...It is not possible even to review this problematic here. For this reason, we have to limit ourselves to presenting some views – those assumed here. It will be convenient to divide this presentation, though it should be rather concise, into two parts. First, a claim of philosophical character: Any science is in various ways connected with ideologies (to avoid considerations on this notion, let’s put it simply: with axiological opinions concerning social order, its development etc.) For obvious reasons, it is particularly evident in the case of social sciences (though, as it is well known, debates around Copernicus or Darwin had not only scientific but also philosophical and – though rather indirectly – ideological character). Ideologies exert mainly negative influence on their development. This influence may be limited; it is possible and desirable though – difficult.

Second: The rise of social sciences as autonomous areas of intellectual activity started (see above) in the 18th. Their development was connected with great transformations that began in that century. Schematically put, we should say here about Enlightenment (cultural revolution of a sort), industrial revolution and democratic revolutions (1776 – the American, 1789 – the French). If to analyze these transformations in detail – in a way that is proper for historical sciences, one should notice and pay attention to the variety of ideologies that started to emerge at that time. However, if to assume another perspective (more philosophical or sociological; let us stress: not opposite but complementary one) we may indicate a set of ideas that can be regarded as central and dominating – not only at the end of 18th century and throughout the whole 19th century but, after the first decades of the 20th century in which their role diminished, also over the recent four decades (symbolically: since 1979 and 1981 – since M. Thacher and R. Reagan). This set might be labelled with the word “liberalism”. Of course, various ideologies took this name themselves, and various have been given it. But, even if not all “real”, historical liberalisms have a common “core” then surely most of them. How to characterize this “core”? – Just for this purpose is convenient (or, perhaps, even necessary) to divide the social world (social reality) into three domains: economy, polity and culture. These domains are supposed to be governed (regulated) by different “logics”: economy – by the “logic” of profit (free market), polity – by the “logic” of security and sovereignty (nation-state), and culture – by the “logic” of autonomous and rational thinking (science; or – alternatively – by the “logic” of tradition, e.g. religious or national).

Of course, liberalism does not maintain that such an image reflects precisely any real place at any time. On the contrary, liberalism criticizes real societies – for the interference of one “logic” on the others; the impact of political “logic” on the economic and the cultural is particularly strongly criticized, and freedom of economic activity and freedom of thought and word are regarded as ultimate social (i.e. concerning social order) values.

The “trinitarian” model of the social reality, if sometime slightly modified (Mann, 1994), has until our times dominated social sciences. This model has – from the current perspective – some serious disadvantages. This issue might also be a subject of separate text. Here but two points will be made.

First, on the cognitive adequacy and usefulness of the “trinitarian” model. It is possible that this model can be applied to ancient, medieval or even early modern societies. But its adequacy for the 20th century is rather poor. Let’s think about medicine. To put it intuitively: it is a “combination” of business, social policy, science, worldviews...Or, let’s think about sport: business and national emotions, mass culture and health... – Instances might be multiplied. But it is not our goal here. Adding one or two more examples would not change the sketchy character of the remark. And a systematic analysis would go far beyond the limits of this text.

And second point. This model has some significant and far reaching consequences for social axiology: it suggest such an axiology which is based on the – mentioned above – idea of three separate “logics” that are to determine three fundamental social values: profit, sovereignty and cultural development. Such an axiology is not adequate to the character of the contemporary social world. More systematic analysis of this problem will be presented in the next chapter.

3. Sustainability – some remarks on social axiology

“Sustainability” (*Nachhaltigkeit* in German, *durabilite* in French) is an interesting term. From a point of view, its history is relatively short: The publication in 1987 of “Our Common Future”, known also as “Brundtland Report”, gave this term its contemporary recognition and popularity. It was reinforced due to 2005 World Summit on Social Development. More and more often used (or even overused), it has become a part of political rhetoric and journalist jargon. Viewed from another perspective, the term’s history is, interestingly, much longer. Its origins date back to the 17th century (Dale, 2018). The history of the term and of the ideas it expresses are very interesting but cannot be discussed here. (more: Przybylska-Czajkowska, 2019a) Our attention is to be focused on the systematic (if brief) analysis of its content.

Let us start from the definition of sustainability contained in Brundtland’s Report: “Sustainable development...meets the needs of the present without compromising the ability of future generations to meet their own needs”. (The World Commission, 1987). Quoting that definition provides a convenient opportunity for formulating a very general, one could say –

philosophical, remark on individual decision-making. Let us assume (in accordance with widespread intuition and everyday experience, and leaving aside more sophisticated philosophical ideas) that our decisions are – in a sense and to a degree – free (to put it in an intuitive way: an individual can be influenced by great many various factors such as: others' opinions, mass media propaganda, his/her mood etc., but – in the last instance – it is just an individual who makes a decision). Human freedom consists in the possibility and ability of choosing between a number of options – accessible in a situation. But this situation may be defined (or, perhaps better to say, perceived) by the given person in very different ways (it is useful to think about a situation on chessboard: depending on “chess intelligence and knowledge” in one and the same setting of chess pieces very different situations may be perceived). Each situation has many “dimension”. Among them – very important – temporality: One can take into account only “instant” consequences of his/her possible decisions or can consider consequences very distant in time. Various social mechanisms (e.g. market, parliamentary election, etc.) favor various types of (temporality of) individual decision-making. On the other side, these mechanisms interact with (in turn variously – biologically, culturally... – determined) individual traits of personality and character. – It should be said now why a comment on individual decision-making follows the definition of sustainability. This accounting consists of a number of points: First, it is assumed here (this assumption is of both – axiological and scientific – character) that fundamental decisions about important social questions should be made as democratically as possible (Reykowski, 2020) (since there is no possibility to discuss here the issue, it should be at least stressed that the notion of democracy – and its derivatives – is regarded here as an ordinal, and not dichotomous, concept). Second, democracy is – from the point of view accepted here – particularly important when fundamental and difficult issues are to be resolved. Third: Just the problems of comparing and balancing our (current) and “theirs” (future) needs and interests are among those – fundamental and difficult – issues. Fourth (strictly connected with the previous one), the problem of acceptable/non-acceptable level of risk: virtually all decisions are based on predictions. And virtually all predictions are of probabilistic character. Therefore, a level of risk (perhaps very little but always positive and never equal to zero) is not eliminable from the process of decision-making. How small should be the risk to be regarded as “practically equal to zero” and negligible? There is no “scientific” answer to this question. It has fundamentally axiological (moral) character. And just such questions should be decided in maximally democratic way.

The above opinions might be generalized and connected with a somewhat different interpretation of sustainability. I mean here the so-called “three pillars of sustainability” (let's leave aside the subtleties connected with two variants of the graphical presentation of this concept) – economic, social, and environmental. To each of these “pillars” a set (a number) of parameters – such as GDP per capita, or amount of accessible water per capita (for the economic), level of social cohesion/solidarity or income inequality (for the social), the level of CO₂ emission or the pace of temperature growth (for the environmental) – can be ascribed.

It seems that the three “pillars” can be regarded as “first approximation” only. It could be said that we need much more comprehensive and much more systematic axiology of the (actual and possible) states of the world (of the global system). And only having such an axiology we could define – in a more precise (even operationalized – this remark is of great important: it’s not about of lexicographical esthetics, it is about an instrument to measure objectively the progress, or regress of sustainability) way than today – the concept of sustainable development. And for the present moment, we confine ourselves to presentation of the intuition that might direct the quest for this definition. It can be characterized as follows: as we know it well today, not all parameters (values) can be maximized simultaneously. But perhaps for each parameter characterizing global system exists such a value which cannot be further minimized if the system is not to collapse. If all parameters satisfies this condition, the system can be characterized as sustainable. In other words: the notion of sustainability seems to be connected with that of “compromise” – between various values.

An axiologically homogenous society seems to be just impossible (if possible, it were for rather obvious reasons undesirable). Thus compromise between values is compromise between people, and sustainability can be (to a degree, at least) regarded as “other side” of axiological heterogeneity. Viewing at sustainability from this perspective, one can ask the question about the road to such a society. An outline of an answer to this question will be presented in the next chapter.

4. Management, governance, politics... – some remarks on collective action

Let us commence this chapter with some comments on one of the classic problems (controversies) of social theory. In simplified form it might be characterized as controversy between the Hobbesian and anti-Hobbesian stance, or – put in alternative terminology – between conflict-based and cooperation-based visions of social order.

All the history of social thought (since its very beginning in Plato until our days) might be written as the history of this controversy. So only selected views on this question can be presented here. First, conflict can manifest itself in various forms: from most brutal violence to verbal skirmishes. Second, conflict and cooperation are not mutually exclusive (look at the relations in many marriages or between members of a political party, etc., etc.) Third, due to various factors (both “material” and “ideal”) the relative importance of conflict and cooperation is changing: at a period/place dominates conflict, at another – cooperation. Fourth, the hypothesis about the increasing domination of cooperation (Wright, 1999) seems to be plausible.

Cooperation in a group in which exist conflicts of interests (so in all groups – there exists no group in which a conflict does not exist, or – at least – existence of such a group is extremely improbable) can be based only on negotiations, If so, the Wright's hypothesis can be rephrased into one claiming for the development of society of negotiations.

As stressed in the 2nd chapter, societies in which we live are societies of organizations. Most, if not virtually all, of negotiations are and will remain negotiations between organizations. It is in the interest of societies, and – in particular – in the interest of global society that negotiations are effective.

A precise (operationalized) definition of effectiveness cannot be proposed here. But three elements of such a definition can be suggested. First and the simplest: time. Protracted negotiations, all other factors equal, should be evaluated critically, and in some situations – even very negatively. Second: the degree (scope) of compromise; in other words: the larger number of satisfied interested persons, the better. And third: the more lasting the effect of negotiations the better.

As already underlined the effectiveness of negotiations depends on many factors, among them – on mutual understanding. For this reason educating future managers should be based upon knowledge about all main types of organizations: business, political civil-society ... Such education should improve for instance mutual understanding between participants of social dialogue between representatives of business, of civil-society organizations (e.g. trade unions) and of government.

Such education should also prepare students to work as managers in virtually all types of organizations. This should have also a positive effect for society: It can be expected that variegated (in the broad, assumed here, sense of this word) professional experience of a manager should broaden his/her understanding of the social world and more sensitive to various values and interest. For instance such a manager working in a profit-oriented organization should be more sensitive to the interest of various stakeholders and not only to the interests of shareholders (Freeman,1982) (also from the point of view of the individual professional development, such type of his/her career might turn out advantageous).

To avoid information over-load, a theory of management – more general than most often taught – should be recommended. Such theory should synthesize knowledge from the classic management theory, from administration and political sciences and even military science. Such synthesis could have foundations in such disciplines as theory of (individual and collective) decision-making, social epistemology, psychology of motivation, microsociology...

The project of general management education could also have some positive consequences for gradual (allowing for reflection on and adaptation to) the process of overcoming the traditional but, as claims (Wallerstein, 2001) outdated divisions of the social sciences.

5. Final remarks

At the end of this paper, let the phrase “Think global, act local” be re-invoked. In this paper a justification has been looked for the opinion that we who do researches in the field of management studies and who pass the knowledge on management to students, we should consider the question about our moral responsibility – as researches and teachers.

Of course, the answer to this question depends on our opinions on the present state of the world. If you believe that we can look to the future with full confidence, you can maintain that we face no serious moral problems. But if you think that there are serious reasons to look to the future anxiously, you should agree that the question about our moral responsibility is serious and urgent.

If we accept this responsibility, we will have to reflect upon the simple question: What is to be done? The answer should be based on the analyses of the contemporary world – analyses developed on the interdisciplinary cooperation of historians and sociologists, economists and management students... But even now, availing of the already existing knowledge – however incomplete and fragmented it is – at least some elements of the answer can be offered.

Let us list them here: Solving global issues can be achieved by variously organized collective actions – actions which are conventionally classified as economic, political or social. But today virtually all collective actions can be regarded as belonging to all these three type. Therefore theory of collective actions (including theory of collective decision-making) can be regarded as the basis for both theoretical and applied management studies.

Theory of collective action – combined with comprehensive knowledge about society and its development – should also be a basis for teaching students. Such a reconstruction of the study program should help the to develop a new, better than currently existing responding to the challenges of our present day, model of manager.

Due to tradition, we might preserve the word “manager” as the name of the profession to be performed by our students. But the content of this word should be changed; briefly speaking: enlarged. Manager of the 21st century should be a person professionally prepared to play various roles in various organizations: The roles of leaders, counselors, organization-designers... In traditional business organizations, in state and self-government institutions, in civil-society organizations...

Many thinkers (political scientists, psychologists, philosophers and others) claim that in the 21st century democratic society (subnational, national, transnational, global) should be negotiations-based (Reykowski, 2020; Owen, Smith, 2015). And since our age societies are and will be societies of organizations thus the negotiations referred to here are and will be mainly negotiations between organizations. The effectiveness of negotiations depends on great many factors. On some these factors (e.g. conflicts of interests) education has little, if any, influence. The influence on other factors might be considerable. First of all, the negotiating competences

are meant here. And among them: understanding of “logics” regulating strategies and tactics of organizations of all types. So education that makes future managers familiar with these “logics” should contribute to the development of democracy. – Perhaps to a slight degree. It should not discourage us: we are well aware after all that no simple solution to any serious problem exists. But a sum of many small contributions might result in a better world – for us, for our children, grandchildren.

Let us summarize these finale remarks:

1. The global (world) society (as well as individual societies) is society of organizations.
2. In such society decisions about methods of responding to global challenges should be achieved through negotiations.
3. Effectiveness of negotiations depends – among others – on mutual understanding.
4. Mutual understanding depends – among others – on awareness of various (economic, political, cultural...) perspectives in which various problems can be analyzed.
5. Therefore it is desirable that the education of the prospective leaders’ (managers’) of organizations equips them with the interdisciplinary knowledge delivering variety of perspectives.
6. To achieve this goal some – rather profound – changes in the in the management curricula would be necessary. (Some suggestions as to the character of such changes have been formulated in this paper.)
7. These changes would contribute – modestly but concretely – to the struggle with the global challenges facing mankind+.

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CORPORATE GREEN INVESTMENT IMPERATIVE AND RISK OF A CREDIT CRUNCH IN POLAND

Irena PYKA^{1*}, Jan PYKA²

¹ University of Economics in Katowice, Katowice; i.pyka@ue.katowice.pl, ORCID: 0000-0001-5524-3550

² Katowice Business University, Katowice; jan.pyka@gwsh.pl, ORCID: 0000-0001-8127-7076

* Correspondence author

Purpose: The main subject of the article is a phenomenon that is increasingly common in countries of the global economy referred to as the so-called credit crunch. The study analyses the reasons that favour the escalation of risk of a credit crunch in the banking systems. The main objective of the article is to expose them as widely as possible, combining it with verification of the determinants of a credit crunch.

Design approach: The empirical research conducted in this study focuses on the Polish banking system. For the first time the credit crunch was observed there in the second half of 2008. It was then that lending to households decreased by 25% and to enterprises by as much as 33%. In the Polish banking system, a drop in the volume of loans to enterprises has been observed for a long time, favouring the increase in risk of a credit crunch.

Findings: The article evaluates the potential risk of a credit crunch in the Polish banking system pointing out their links resulting from the implementation of the new climate policy in the European Union as well as the COVID-19 pandemic. This is caused by the fact that during the COVID-19 crisis, credit rating of Polish enterprises decreased significantly, causing partial restrictions or even elimination of bank loan in industries threatened by the crisis.

Research implication: The Polish economy is facing a significant challenge of meeting the EU criteria for limiting CO₂ emissions, which will force domestic enterprises to invest considerably in environmental protection and will increase their demand for debt financing, including bank loans. Banks are preparing for green lending to the Polish economy which signifies a strong transition of loans to investments which meet the taxonomy criteria and are therefore subject to climate objectives.

Practical and social implication: Industry risk will determine lending of Polish enterprises under the conditions of the European Green Deal. Green financing of investments of Polish enterprises is therefore becoming a significant potential cause of increasing risk of a credit crunch in the Polish banking sector.

Originality/value: Presentation of the enterprise credit dilemmas in the conditions of financial instability of the global economy in the perspective of credit-crunch in Poland is a novel, original and contemporary subject.

The diagnosis of the determinants of this threat has facilitated their positioning relatively to the risk of credit-crunch in the Polish banking sector. The results of this analysis underline the risks in this sector and the consequences of introducing European taxonomy of green investments as factors limiting credit actions and enterprise credits in banks.

Keywords: credit-crunch; corporate green credits; credit policy; new EU climate policy; COVID-19 crisis.

Article category: general review.

1. Introduction

A bank loan was in the past and remains the basic instrument for financing business entities which contributes to the strengthening of their development potential and thus the country's economy (Mishikin, 2002; Freixas, Rochet, 2007; De Soto, 2009). Economic, financial, and social functions of a bank loan make the issue of lending to business entities a constant focus of research interest (Kasiewicz, Kurkliński, Marcinkowska, 2013; Bednarz, Gostomski, 2006; Próchicka-Grabias, Szelałowska, 2006; Duliniec, 2011; Kołosowska, Tokarski, A., Tokarski, M., Chojnacka, 2006; Kosowska, 2009). The relation between economic investments and the business cycle first outlined in J.M. Keynes' macroeconomic theory remains an undisputed paradigm of modern economic thought (Keynes, 2003; Belka, 1990, p. 611; Zagóra-Jonszta, 2003). When analysing the relation between debt and investment, H. Minsky formulated the hypothesis of financial instability indicating the role of faulty incentive systems in financial institutions that favour financial crises and destabilise the real economy (Minsky, 1992). While recognising that the financial sector plays a crucial role during the business cycle, he defined the economic and social consequences resulting from the disruptions in bank lending (Minsky, 1992). The theory of financial instability also became a source of recommendations to reduce the procyclicality of loan in the global economy and the methods of stabilising the financial system implemented in it after the financial crisis of the 21st century (Calomiris, 2008; Kindleberger, Aliber, 2005). The international community associating lending activity with the return of the economy to growth was taken by surprise by the persistence for a long time of a strong mismatch between the supply of credit and economically reasonable demand for credit in many countries, including highly developed ones. The observed phenomenon known as a credit crunch occurred despite drastic reduction in interest rates and numerous quantitative easing programmes of central banks and therefore the application of extraordinary monetary policy instruments aimed at activating commercial bank lending.

Central banks have been signalling the possibility of excessive reduction in the availability of credits to the economy for a long time. However, till now, they have regarded a drastic decrease in lending activity caused by an unjustified drop of demand for bank loans as a phenomenon accompanying recessionary shocks in the economy (Berger, Udell, 1994; Bernanke, Lown, 1991; Kilesen, Tatom, 1992; Gern, Jannsen, 2009). The COVID-19 pandemic has strengthened this point of view by connecting a credit crunch with the impact of the systemic risk in the social sector. The COVID-19 crisis arose due to the fact that the global

community had been infected by coronavirus causing lockdown of the global economy which entailed a demand shock and a high level of liquidity risk among business entities. As a result, their instant demand for cash increased while slowing the demand for bank loans. However, the large volume of public aid measures launched by governments within the framework of anti-pandemic shields did not stimulate the demand for bank loans. Quite the opposite, banks have tightened their credit policies by reducing the interest of business entities in new loans.

A credit crunch being the basic research subject in the study, despite its ambiguity in definition (Berger, Udell, 1994), has been the subject of a wide range of interests since the middle of the twentieth century¹. In this article, a credit crunch refers to an excessive reduction in bank loans caused by a reduction in supply as well as demand (Raport o stabilności systemu finansowego, 2020). The study examined the determinants of the increasingly observed intensification of risk of a credit crunch in the banking sectors. Without doubt they vary although they are most frequently connected with the credit policy pursued by banks. Credit policy, however, is a unique and individualised economic entity which encompasses various regulatory actions concentrated on balancing the credit market. Banks differentiate it in respect of offers, procedures for assessing investment risk or the conditions for concluding contracts with clients. Credit policy is also increasingly conducted by bank stakeholders. In the free financial market of the global economy, they have an opportunity, by bypassing the selection mechanism of companies applying for bank loans, to choose the loan offer which, in their case, may turn out to be the most beneficial. Whereas when applying for bank loans they frequently avoid meeting the formal requirements imposed on them (Freel, Carter, Tagg, Mason, 2012, pp. 399-418). Bank stakeholders in the free financial market also raise more non-bank capital (Wolański, 2013, p. 25). However, the free banking market is dominated by large financial and industrial corporations. Therefore, risk of a credit crunch is concentrated on the domestic market where demand for a bank loan is shaped by strongly diversified stakeholders. Thereby the doctrine of liberalism accompanying the global economy justifies the assessment of the credit crunch phenomenon from the perspective of the theory of choice optimising the behaviour of commercial banks, central banks and their stakeholders making risk of a credit crunch on the domestic financial market to be determined by numerous factors. Their impact over time is variable. The determinants of risk of a credit crunch during the global financial crisis (cf. Figure 1) were different than during the COVID-19 pandemic (cf. Figure 2). Therefore, the expected implementation of the European Green Deal contributing to the increase in risk of a credit crunch will be the result of symptomatic factors only. The main objective in the study is to explore the determinants of risk of a credit crunch on the Polish credit market which is increasingly directed towards sustainable corporate financing. The empirical analysis of changes taking place on the credit market in Poland indicates that the high risk of a credit crunch is becoming a real threat to the banking sector as a consequence of

¹ The term was first used with regard to the measures undertaken by the FED in the 1960s to reduce the level of inflation by reducing consumption.

rapid changes in economic reality. The study intends to indicate that recessionary shocks in the economy on the Polish banking market favouring the occurrence of a credit crunch are accompanied by a range of factors, among which industry plays an increasingly significant role.

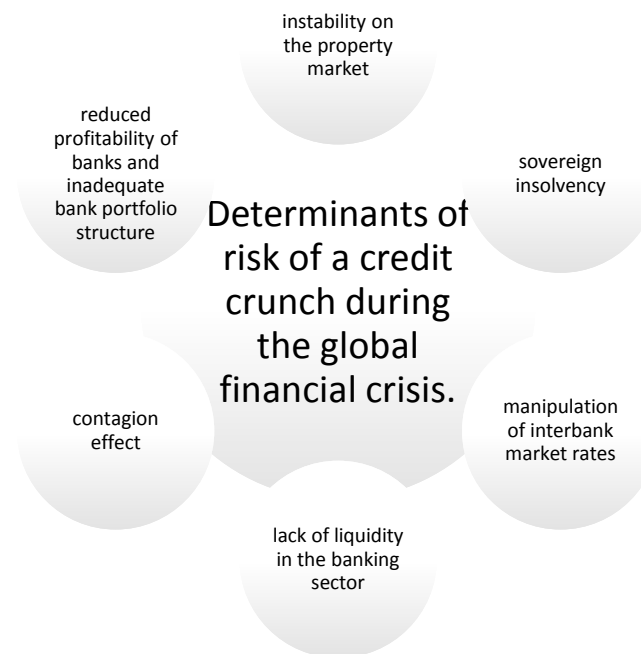


Figure 1. Determinants of risk of a credit crunch during the global financial crisis. Source: own elaboration

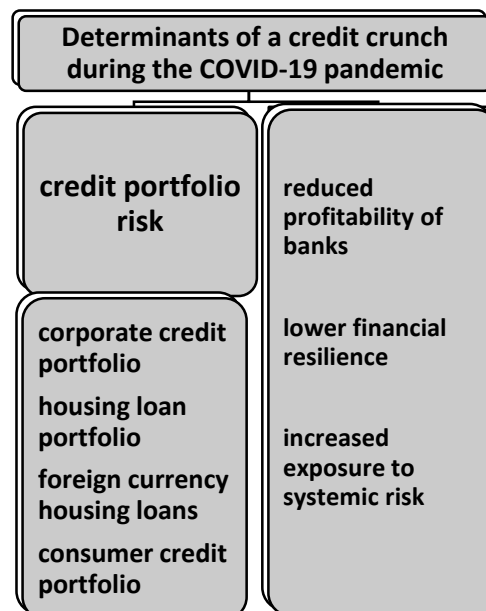


Figure 2. Determinants of risk of a credit crunch during the COVID-19 pandemic. Source: own elaboration

2. Results

Observation of the phenomenon of a credit crunch in the Polish banking sector makes it possible, above all, to draw attention to the absolute necessity to normalise the research terminology. Not only is there no uniform definition of a credit crunch, but also the risk of its occurrence in the banking sector refers to various bank loans. Figure 4 indicating a collapse in lending in Poland in 2008 refers to the share of credit receivables from the non-financial sector in total assets. In 2009, however, this share stabilised on the level around 55% in the entire analysed period, which makes it possible to recognise that a credit crunch in the Polish banking sector was of an incidental nature and risk of its recurrence is low considering the fact that the value of credit receivables from the non-financial sector has been slowly but steadily growing over the years. On the other hand, the problem of a credit crunch in the Polish banking sector is unfavourable in the study of the structure of credit receivables (cf. Figure 3), since starting from 2004, the volume of credit receivables from households prevails in the structure of bank loans and grows faster than credit receivables from enterprises. The persistence of this trend generates a high level of risk of a credit crunch in the Polish banking system. Business loans are, and will long remain, the main driver of the economic growth in Poland. While lending to households cannot be deprived of its pro-growth power, its positive motivation of production processes is of short-term nature and is seriously threatened by the force of instability in the world economy.

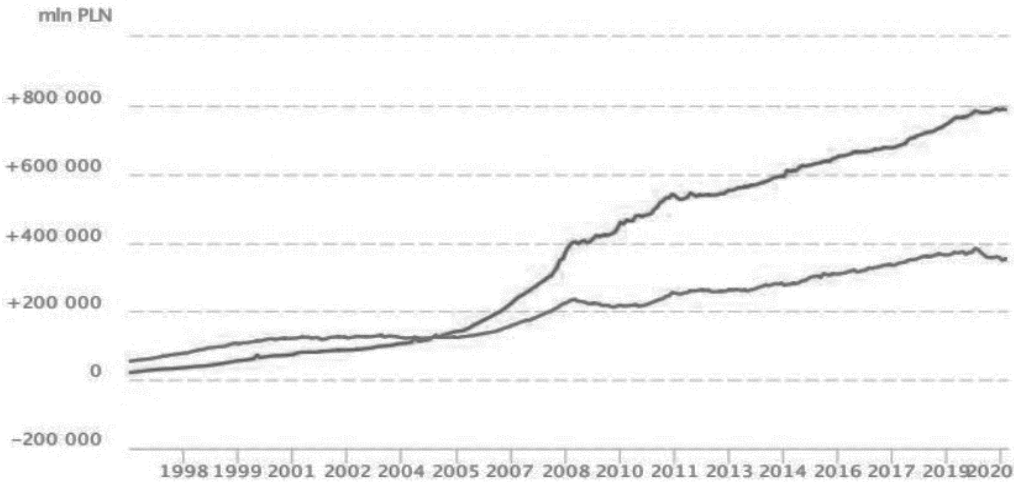


Figure 3. Loans and other receivables from households and enterprises (stocks) in PLN million.

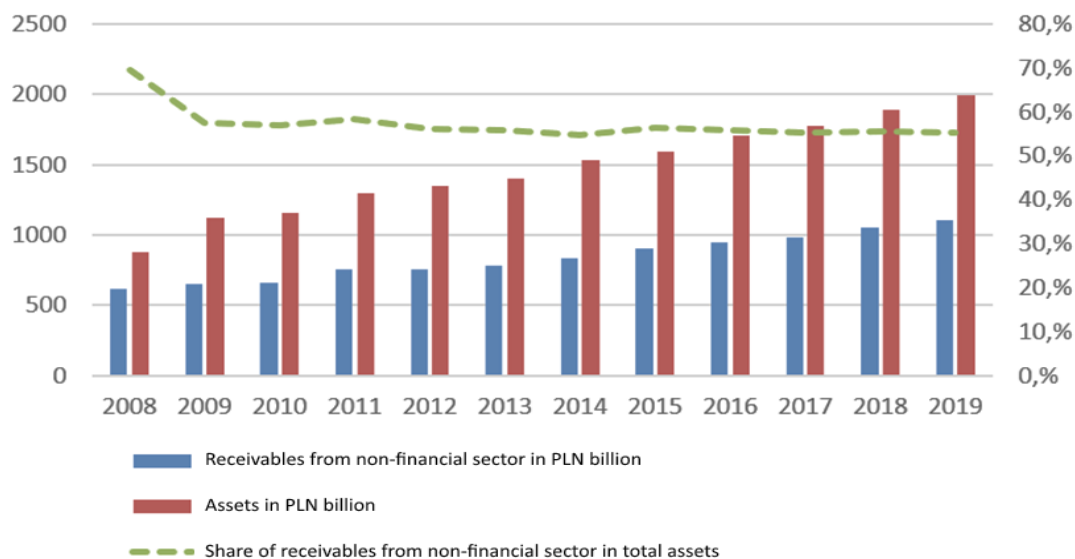


Figure 4. Credit receivables from the non-financial sector in the Polish banking sector in the years 2008-2019. Source: The National Bank of Poland.

The experience gained during the COVID-19 pandemic and global financial crisis in the years 2008-2010 demonstrates that changes in the lending policy of banks against financial instability of the economy are caused by the worsening conditions of granting loans to non-financial entities, including mainly enterprises. Under such circumstances the credit rating of the largest borrowers decreases which entails rapid deterioration of banks' loan portfolios and an increase in bank risk. Lending to households does not solve the problem of decreasing production dynamics and does not reduce the scale of the expected economic recession. The collapse of lending to business entities not only confirms the occurrence of a credit crunch in the Polish banking sector, but also favours the formation of favourable conditions for its emergence in the longer term. Emergency actions undertaken by central banks are usually the antidote to the effects of a collapse in lending to businesses. They were widely appropriate in the context of the global financial crisis. A quick response to the financial instability caused by the COVID-19 pandemic was taken by the National Bank of Poland which changed its approach towards monetary policy in a short time. However, the COVID-19 pandemic in Poland occurred under conditions of free space for action by the National Central Bank. Throughout the global financial crisis, the National Bank of Poland did not pursue a policy of negative interest rates and quantitative easing programmes. This situation made it possible to implement during the COVID-19 period a package of the NBP measures aimed at reducing the cost of financing business entities and increasing the liquidity of the banking sector. In May 2020, the reference interest rate in Poland was reduced which in the following steps implied that it was stabilised at the level of 0.10% (until the Monetary Policy Council decision-making meeting held on 7 April 2021). The reduction in the reference rate was accompanied by other measures strengthening banks' incentives to keep lending rates low (Raport o stabilności systemu finansowego, 2020, pp. 30-31). At the same time, the National Bank of Poland undertook

a range of measures to increase liquidity in the Polish banking sector. The primary reason for their inclusion in the package of measures was the increased demand among households and businesses for liquid funds during the first period of the COVID-19 pandemic. Throughout this period there was an increase in cash in circulation by PLN 54 billion, that is by 23%. The phenomenon, unprecedented even during the global financial crisis, resulted in a rapid decline in liquidity in the Polish banking sector requiring non-standard measures to be taken by the National Bank of Poland (Sytuacja na rynku kredytowym, 2021, p. 32).

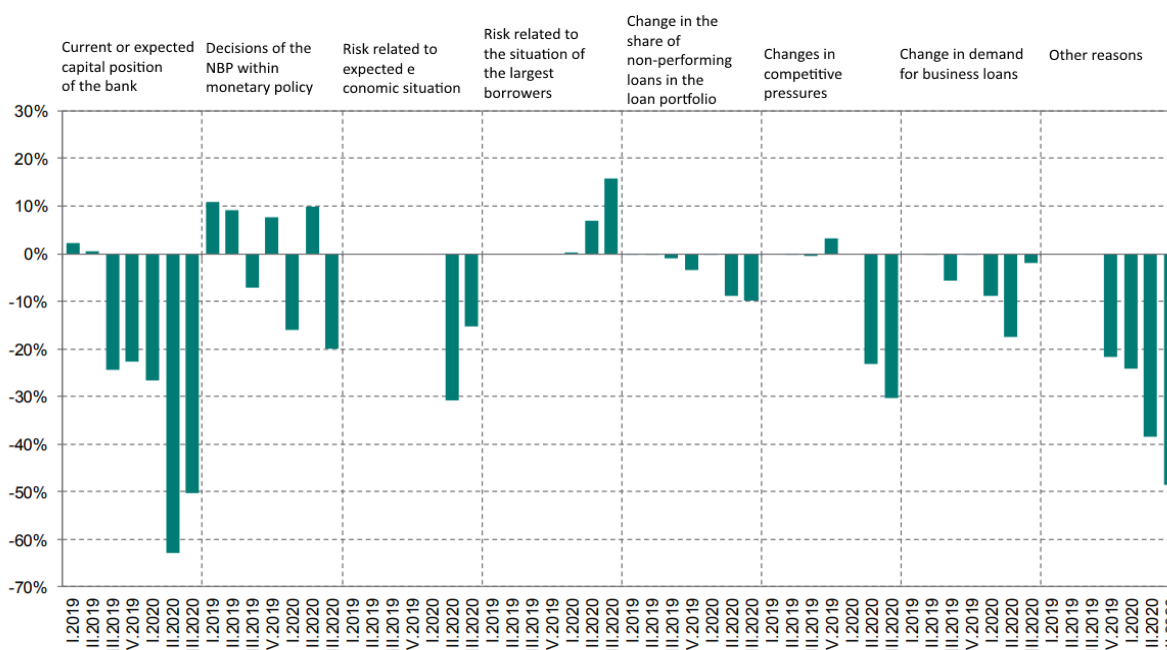


Figure 5. Reasons for changes in the credit policy. Source: Situation on the credit market results of the survey to chairpersons of credit committees Q4 2020, p. 5.

They concentrated on repo-type operations to inject liquidity into the banking sector and the purchase of treasury bonds and debt securities guaranteed by the State Treasury on the secondary market, becoming a significant factor in stimulating lending in the Polish banking sector. Despite such wide-ranging actions by the National Bank of Poland, all commercial banks in Poland already tightened their credit policy in the first quarter of 2020. There were various reasons for the increase in its restrictiveness (cf. Figure 5). Predominating among these were the expected risks related to an unstable growth perspective, but also industry risk.

The 'COVID-19' experience teaches that any industry may turn out to be a difficult bank partner in the short term. This changes the foregoing understanding of industry risk. This is because banks primarily depended on macro and microeconomic factors connected with the environment in which enterprises in the identified industry operate as well as internal conditions shaping their economic and financial status. The group of macroeconomic factors usually included those that resulted from the systemic specificity of the state, cyclical changes in the economy or the directions of development of the world economy. Microeconomic factors were usually associated with market risk as they were perceived as changes in competitive

conditions, price fluctuations or higher operating costs in the industry and, as a result, changes in the internal operating conditions of enterprises in a particular sector. Banks noticing the different degree of risk exposure of different industries were mainly concerned about changes in the assessment of their operational or financial risk, eventually changing the level of risk incurred. The COVID-19 pandemic put businesses assigned to these industries directly or indirectly affected by government restriction in a difficult position. Banks began to exclude such businesses from lending procedures placing them among high-risk industries. Therefore, the public authority umbrella did not change the banks' approach towards assessing industry risk. On the contrary, banks began to explicitly specify industries they did not want to finance. It may be expected that such industries as the hotel and tourism industries will rapidly reduce their level of credit risk as lockdown conditions ease. However, this will not change the banks' highly individualized approach to industry risk during the pandemic. Not only industries, but also specific industry companies will be stigmatised. In the longer term, industry risk will affect bank lending activity given an increasing challenge of sustainable economic development.

3. Discussion

The concept of sustainable development is not new and it has been making its path in the world economy for many years (Rada Europejska, 2015; Szpak, 2020). However, it received a new spirit not so long ago in the form of green finance in the banking environment of the European Union. The European Green Deal (EGD) document was published in autumn 2019 (Europejski Zielony Ład. Komisja Europejska...).

It constitutes a roadmap for using resources more efficiently than ever before through the transition to clean, closed-loop economy, as well as for counteracting the loss of biodiversity and reducing pollution levels. The EU wants to become a climate neutral continent by 2050. Reaching this goal is not an easy task and it will require a range of actions in all industries of the economy. Climate change is an extremely complex process which requires especially:

- investments in environmentally friendly technologies,
- industrial innovations,
- increasing the energy efficiency of buildings,
- radical decarbonisation of the energy sector.

Within the framework of these broadly outlined areas of action, specific tasks are emerging that will require many new investments and financial instruments implemented in the vein of a fair transition favouring sustainable development. It is estimated that the impact of the transition to green economy will be uneven across different EU countries, therefore it is necessary for them to obtain financial support and technical assistance within the framework of

the fair transition mechanism. However, the fair transition mechanism will not be sufficient in order to overcome climate barriers. In March 2018, the European Commission announced the EC Action Plan of financing sustainable growth aimed at three main financing objectives (Zrównoważone finansowanie...):

- redirecting capital flows towards sustainable investments in order to achieve sustainable and inclusive growth,
- managing financial risk resulting from climate changes, environmental degradation and social issues,
- promoting transparency and long-term nature in the financial and economic activity.

On 15 April 2020, the Council of the European Union introduced a common system of classification for sustainable finance that should encourage private investors to invest in sustainable development and contribute to a climate economy². It should also facilitate assessment and help investors redirect towards technologies, sectors and companies of a more sustainable nature. The declaration of the implementation of the European Green Deal was also confirmed under the pandemic conditions. It was indeed recognised that the post-pandemic recovery programmes will continue to encompass actions aimed at reaching zero GHG emissions in Europe by 2050 (Gajewski, Paprocki, 2020, p. 5). The energy transition of Poland meeting the challenges arising from the adoption of the European Green Deal and simultaneously guaranteeing energy security of the country will require expenditures of about PLN 1,600 billion in the 2021-2024 perspective. Only in the fuel and energy sector the financial needs are estimated at PLN 867-890 billion, whereas in non-energy sectors (industry, transportation, agriculture, households, services) the expenditures of PLN 745 billion are expected. It is worth emphasising that EU and national resources dedicated for energy and climate transition will have amounted to PLN 260 billion by 2030 (Polityka energetyczna Polski do 2040 r., 2021, pp. 90-91). The scale of capital expenditures constituting Polish contribution to the implementation of ambitious objectives included in the EU plan of leading in the world pursuit of achieving climate neutrality will imply the need to use diverse sources and innovative methods of financing. The financial framework specifies the involvement of the budget of state and local governments, EU and non-EU funds, private funds, debt financing and entities of the fuel and energy sector. It is noted that after 2020, the financial burden of the planned investments will be, to a lesser extent, implemented through non-national funds. These extremely ambitious investment plans will have to be implemented in the post-covid environment among economies affected by the results of the pandemic and unpredictable risk of further covid waves and lockdowns. The European Union's climate and energy policy together with its strategic vision of climate neutrality in 2050 implemented in parallel with the recovery from the deep economic crisis, increases risk of credit crunch in the entire Community.

² The taxonomy regarding climate change mitigation and adaptation to this change should be adopted by the end of 2020 so that it can fully come into force by the end of 2021. As far as the remaining four objectives are concerned, the taxonomy is to be established by the end of 2021 and come into force by the end of 2022.

Risk of credit crunch is particularly high in Poland where electricity generation system is based on coal. This exceptionally difficult starting position generates a large scale of indispensable adjustment activities that will influence the market condition of enterprises in the country and abroad. The difficulties of entities in the fuel and energy sectors will not encourage activity in the credit market and will even curb sectoral development investments. There is a high probability of burdening consumers with the costs of energy transition which may move over to the eagerness and ability of households and micro and macro family companies to engage in credits. The measures undertaken in this area indicate the establishment of a platform for financing sustainable development outside the banking sector. They should be replaced by investment funds, pension funds, insurance institutions and, of course, a large flow of public funds directed more and more profusely as public private partnerships. However, more and more banks are moving towards sustainable finance, recognising the necessity for having green assets which is particularly satisfying for their strategic partners. Banks are also orienting their interest in financial intermediation between EU funds to promote green investments and their recipients. Therefore, it should be expected that their role in the process of financing sustainable development will be increasing. The situation is causing banks to increasingly eliminate lending to non-European taxpayers.

Extreme situations in the economic system such as lockdown or global crisis favour the increase in risk of a credit crunch also as a consequence of various factors determining the demand for bank loans. In the Polish banking sector burdened with the results of the COVID-19 pandemic the reasons for changes in demand for corporate credit were different (cf. Figure 6).

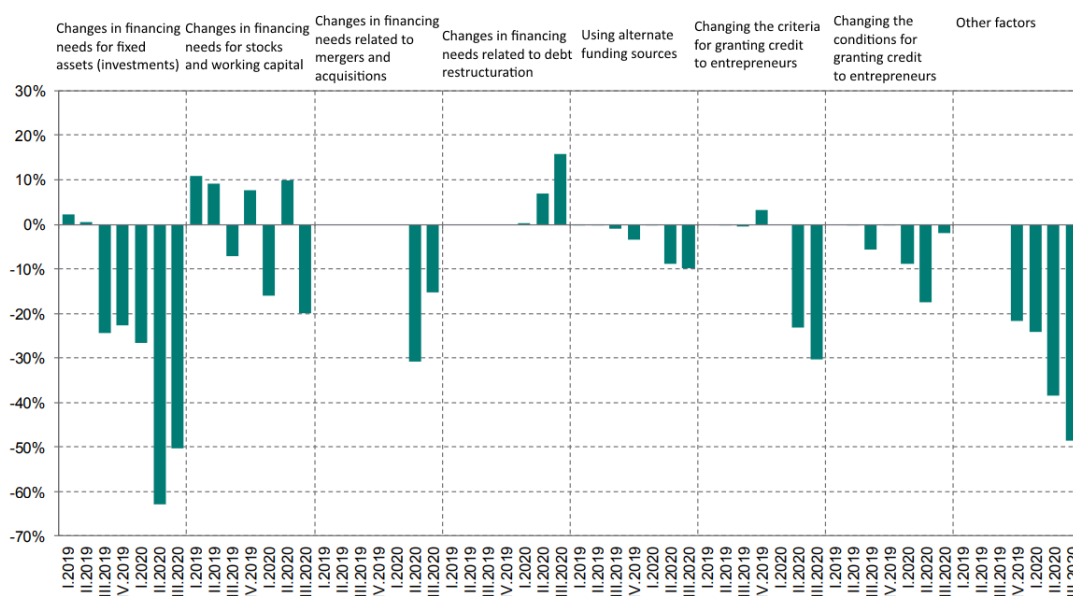
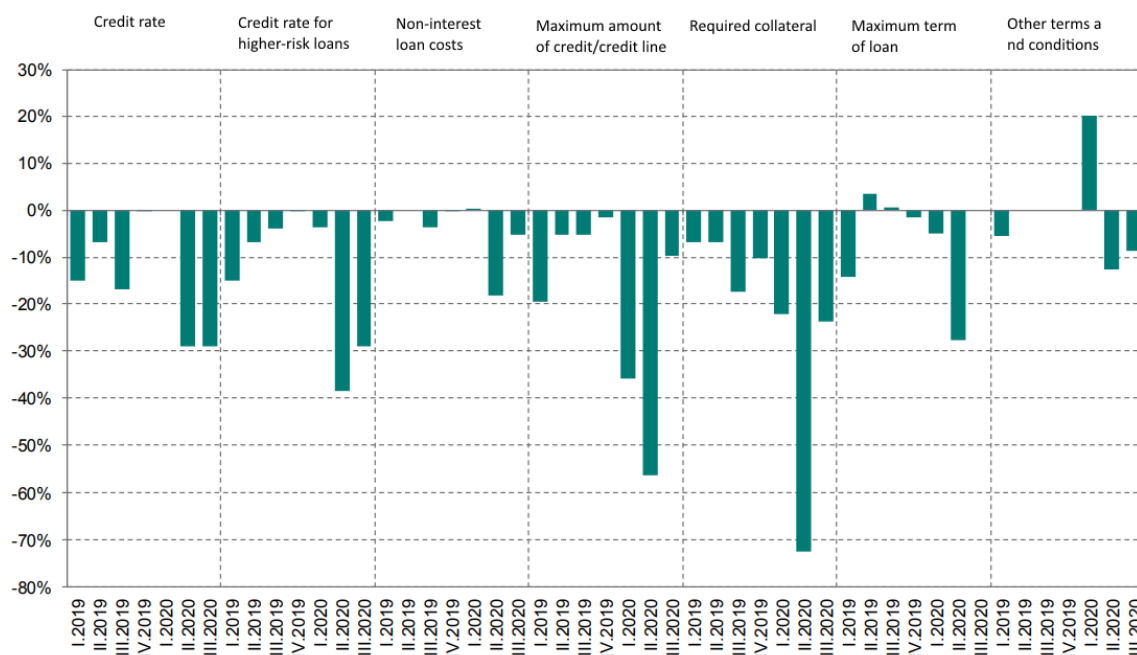


Figure 6. Reasons for changes in demand for corporate credit. Source: Situation on the credit market results of the survey to chairpersons of credit committees Q4 2020, p. 7.

Their intensity fluctuated in the following quarters of the pandemic, although the main role in the reduction in demand for bank loans was played by a significant decrease in demand inventory financing and working capital financing (-42%) and, to a lesser extent, for financing fixed assets and mergers and acquisitions (-24% and -16% respectively) (Sytuacja na rynku kredytowym, 2021, p. 7). However, the demand was not the major driver of the reduction in lending in the Polish banking system in the years 2019-2020. The support from the Polish Development Fund and forms of public anti-crisis support (-13%) also played a significant role in its stabilisation. Concerned about the increase of the risk of a credit crunch, the Polish Bank Association has also devised a package of regulatory solutions whose implementation would have a positive influence on lending. However, the systemic measures did not halt the approach of commercial banks towards the reduction the restrictiveness of corporate lending conditions. The scale of their tightening towards enterprises turned out to be even stronger than the one considered the biggest in mid-2009. Banks increased their lending margins. They differentiated them towards higher-risk borrowers and increased loan margins by up to 30% and up to 40% for higher-risk loans. They also increased the level of collateral for their lending and the cost of lending by raising non-interest credit costs. They raised credit security and limited the amount and term of the loan as well (cf. Figure 7).



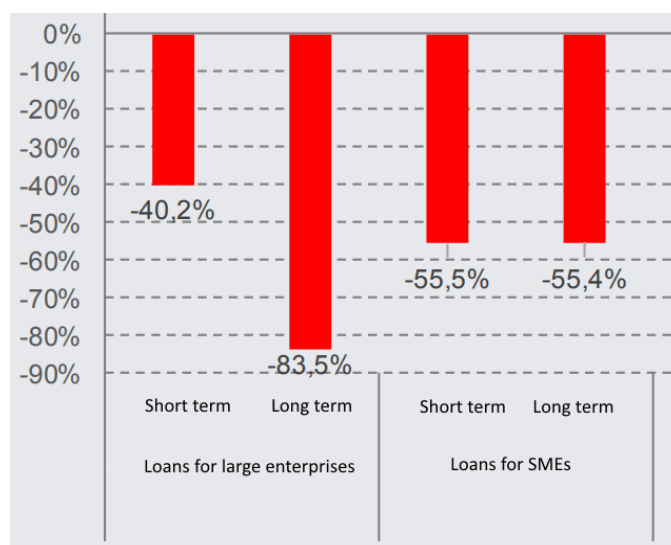


Figure 8. Demand for bank loans in Q4 2020 Source: elaborated on the basis of Situation on the credit market – results of the survey to chairpersons of credit committees Q4 2021.

4. Conclusions

The credit crunch risk analysis in the publication points out that there are more and more reasons for its intensification in the banking sector. Investment financing in the global economy is being more and more frequently provided by the non-banking sector, significantly modelling the demand for bank credit. Simultaneously, the emerging mismatch between credit supply and economically reasonable credit demand results from the intensifying periods of financial instability in the global economy. The countries in the global economy did not cope with all the effects of the global financial crisis and are already trapped in COVID-19. The need to halt the effects of the coronavirus infecting people forced countries in the global economy to announce a lockdown. It resulted in a demand shock and a high increase in the level of liquidity risk among business entities and, in the banking systems, in a significant increase in credit risk and, consequently, in the risk of excessive reduction of credit availability in the economy (credit crunch). This situation shows that in times of financial instability, risk of a credit crunch is high and the response to its effects is hindered. Indeed, the determinants causing a credit crunch in the banking sectors are unexpected and heterogeneous. For this reason, equilibrium on the credit market is extremely difficult to regulate. In the analysed cases of financial instability of the global economy, its absence from the banking system was mitigated spontaneously and in various manners.

The mismatch between credit supply and economically reasonable credit demand was also not overcome in the short term despite the extraordinary monetary policies of central banks stimulating credit growth for business entities during the global financial crisis. The situation on the credit market during the pandemic also turned out to be complicated. The sequence of

increasing economic recession in the countries affected by the COVID-19 pandemic contributed to a specific response to it. Actions aimed at limiting the impact of the pandemic were directed at the economy, particularly those areas of the economy which suffered the most. Financial support in Poland was mainly focused on companies in the industries most affected by the crisis and was of fiscal nature. It concerned mainly temporary suspension of tax payments and compulsory social contributions, introduction of tax allowances and partial takeover of employees' salaries by the state budget (Raport o stabilności systemu finansowego, 2020, p. 23). The fiscal policy of the government was supported by an expansive monetary policy of the National Bank of Poland, which, however, did not serve as the major instrument for stabilising the economy and the financial system. The undertaken fiscal and monetary measures also did not contribute to a quick restoring of the balance on the Polish credit market. It means that the impacting risk of a credit crunch in banking sectors requires multidisciplinary and diverse actions of many institutions and authorities. It also requires a strategy to be drafted for allocating financial resources to the business activity of Polish enterprises with particular emphasis on the community actions in the European Union aimed principally at helping to repair the economic damage caused by the coronavirus pandemic and, in the long term, at creating the European Green Deal. Although the recovery plan for Europe approved in 2020 by the European Commission, the European Parliament and EU heads of states and governments, constitutes the largest package of measures funded from the EU budget so far, it is still not a real financial stream flowing to the EU member countries. Furthermore, in view of its assumptions, it is already known that energy transition of Poland will require high levels of investment expenditures already in 2021, constituting Poland's contribution to the implementation of ambitious objectives of achieving climate neutrality. They will imply the use of diverse sources and innovative methods of financing. Considering the fact that ambitious investment plans will have to be implemented in a post-COVID environment, in the environment of economies significantly affected by the pandemic and the unpredictable risk of further COVID waves and lockdowns, risk of a credit crunch can be expected to grow not only in Poland but also across the entire European Union. The financing investment needs of enterprises indeed has its limitations which generally boils down to a growth of the cost of capital raised on the financial markets. In Poland, risk of a credit crunch should be regarded as particularly high since the so-called energy mix is particularly unfavourable from the GHG perspective. The need to adapt Polish industry to the conditions of the Green Deal is not limited to the entities in the fuel and energy sector. High emissivity of iron and steel industry, the chemical, mineral or paper sectors imply potential difficulties for entities in these sectors, which will increase risk of a credit crunch. The conducted analysis indicates attempts to anticipate and create financing platforms for sustainable development outside the banking sector. In response, banks applying the Green Deal adaptation strategy are activating their actions in the green investment market. An indication of this activation is a potential intermediation in the process of financing beneficiaries of green investments from the EU funds.

This leads to the conclusion that the role of banks in the process of financing sustainable development will increase. The situation is causing banks to increasingly eliminate lending to non-European taxpayers. Therefore, industry risk in the Polish banking system is becoming a significant factor in limiting lending and/or eliminating corporate loans from their portfolios. Such actions have already been observed in the Polish banking sector. The volume of credit granted to households is indeed steadily increasing, while lending to business is slowly decreasing. Post-crisis expectations of rising loan interest rates are a factor contributing to its escalation of risk of a credit crunch not just in the Polish banking sector. Business loans are also subject to greater bank risk than household loans. Banks granting credits should be guided by the banking law and prudential regulations applicable to them. They imply unconditional need for maintaining financial security, but this is accompanied by a lower profit, decreasing profitability and/or the market value of the bank. While also preparing for green economy lending banks will finance mainly green investments. Therefore, they will move towards the elimination of lending to industries which do not comply with these criteria. Therefore, a change in their approach towards credit risk evaluation should be expected. Thus, a credit crunch may turn out to be a persistent, industry-differentiated and increasing phenomenon.

Negative implications for business lending can also arise from an outflow of the deposit base from the banking sector. There are many factors favouring such a situation in the Polish banking sector, which makes the occurrence of risk of a credit crunch relatively high, and it depends, to a large extent, on the volatility of the external conditions for the functioning of domestic banks.

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TELEWORK AS THE DEVELOPMENT DIRECTION OF THE WAYS OF PROVIDING WORK BY AN EMPLOYEE IN THE CRISIS SITUATION

Marzena PYTEL-KOPCZYŃSKA^{1*}, Piotr OLEKSIAK²

¹ Czestochowa University of Technology, Faculty of Management; marzena.pytel-kopczynska@wz.pcz.pl,
ORCID: 0000-0001-8850-8586

² University of Lodz, Faculty of Economics and Sociology; piotr.oleksiak@uni.lodz.pl,
ORCID: 0000-0001-7889-396X

* Correspondence author

Purpose: The purpose of this article is to present the peculiarity of telework as a form of providing work relation in the crisis situation in the organisation.

Design/methodology/approach: The article demonstrates the term of telework, its legal regulations, advantages and disadvantages of telework as well as shows the results of empirical study concerning this issue in the period of Covid-19 pandemic. The article is based on the literature review in this scope and presents the results of secondary study relating to the telework in Polish companies during the pandemic.

Findings: The considerations presented in the article indicate that the epidemiological situation connected with coronavirus enforced the necessity to take immediate and efficient actions to implement telework widely, which got a big group of supporters both among employers as well as employees. It is likely that home office may be the main form of providing work relation, e.g. the office one, in the nearest future.

Originality/value: The value of this paper is theoretical. The possibilities of implementing remote work were presented in the paper concerning its advantages and limitations, with the particular consideration of Polish work market. The paper is original due to its multiaspect approach to the academic issue whereas the obtained results may be useful both for management practitioners as well as may be an inspiration for further research.

Keywords: telework, employee, pandemic, Covid-19, organization.

Category of the paper: Viewpoint, General review.

1. Introduction

Covid-19 pandemic (being a crisis situation for the economy as well as economic organizations functioning in it) lasting for longer time caused the necessity to make significant changes in the way of work organization. Its consequence (arising from the necessity to provide health safety for employees) was that the companies moved to the mode of telework. The months of telework caused that it got a big group of supporters (both among employees as well as employers). Thus, home office may become the basic form of work provision, e.g. the office one (no matter how the epidemiological situation develops).

2. The term of telework and its legal aspects

The term of telework is not clear. Generally speaking, the term of remote work and telework refers to every form of remote work i.e. performed outside the employer's seat.

According to J. Messenger (Messenger, 2019), one of the ways to identify various forms of remote work is so called evolutionary perspective of information and communication technologies. Taking it into consideration, J. Messenger distinguishes three generations of telework. The first generation was connected with personal computers, landline telephones and faxes (their aim was to limit the time and cost of commuting by making it easier for employees to use these devices). In the case of the second generation, the remote work is perceived as a particular kind of work organization covering e.g. traditional office work, mobile work or virtual work but also type of flexible work such as – part-time work or flexi-time. On the other hand, the third generation of telework is mainly connected with the development of ITC technology (laptops, smartphones). Thanks to that, these devices become not only data processing devices but also communication devices (of course the permanent access to the Internet is also crucial) making it possible to create so called “virtual office”.

The remote work may be regarded as a particular case of flexible work in the scope of four flexibility dimensions: time, duration of relations, localization and a form of agreement between an employee and an employer (Carnoy, 2000). In particular, it refers mainly to the place dimension because remote work is performed outside the employer's seat. It is also possible to organise remote work in which the time of work performance is also flexible. Due to the fact that the employer is interested in the effects of the work, and not the detailed control of its course, the flexibility refers also to the way of job performance and leaving the employee the significant freedom concerning the organization of the details of their own work.

J. Nilles is regarded to be a creator of remote work. He conducted the first experimental project of telework in 1973 and defined it as work which makes it possible to send its effects with the use of information technologies such as telecommunication and computers instead of physical move of people who are to perform this work (Nilles, 1976).

The idea of remote work was spread by A. Toffler in a book *The Third Wave* and the futurologist F. Kinsman in the position *Telecommuters* (Szluż, 2013).

Taking into consideration legal regulations – pursuant to article 3 of the Act of 20 March 2020 on Particular Solutions connected with the Prevention, Counteraction and Fighting COVID-19, Other Infectious Diseases and Crisis Situations caused by them – the employer may order remote work to the employee in any moment. Should the employer fail to have organizational or technical possibilities to perform the work at home, the employer should provide the employee with the appropriate equipment necessary to perform the work (computer or telephone). The employee may also request to perform remote work. However, finally the employer takes final decisions and the employee must submit to the employer's decision. Pursuant to the article of the act mentioned above the employer may withdraw the order to perform telework at any moment (the employee should be informed about such a possibility when he is directed to work).

The employer ordering some employees telework and at the same time refusing its performance to other employees should have objective prerequisites. Should the employee state that, according to him, there was discrimination, he may file the case to be recognized in court. During the proceedings the employer must give clear reasons which he used when he introduced the remote work only for selected employees.

Legal regulations do not specify any additional employees' privileges in the provisions of law (referring to their remuneration, i.e. subsidy to the consumption of electricity or payment for the use of the Internet). Remote work is performed according to the same conditions as the work on the contract of employment and with the same remuneration as work in the company seat. The employer is not obliged to introduce any additional benefits connected with the remote work, it is only the will of the employer (such benefits should be regulated in the company regulations). Should the company fail to have a collective labour agreement, work or remuneration regulations, the issues of possible equivalents or benefits for remote work are settled by the superior with the employee individually.

3. Profits and limits connected with the performance of telework

Recently the interest in performing telework has been growing. The key determinants of the increase in the interest in this form of performing work relation comprise (Sęczkowska, 2019, Szluz, 2013):

- For the employer – the increase in competitiveness, adaptation to the world trends and the needs of young generation, trying to reduce the costs of work organization, minimising the employees' absence, willingness to acquire high-qualified specialists to perform projects.
- For the employee – the willingness of greater work flexibility (flexibility of the workplace, adaptation of work time and rhythm to their own possibilities), willingness to limit the time of commuting and economic and psychological costs connected with it, possibility to combine professional work with private life and family, willingness to work in friendly conditions), willingness to avoid co-workers (the disliked ones).

According to Olejniczak, the main macroeconomic benefits of the remote work are (Olejniczak, 2000, pp. 19-20):

- Increase in the company efficiency and creating new workplaces in every region of the world.
- Decreasing the level of migrations to big cities.
- Easier competition for small and medium companies with big companies.
- Ecological profits.
- Increase in the demand for telecommunication services and teleinformation innovations.

The main advantages of the remote work are (Furmanek, 2015, pp. 128-129):

- The possibility to organize the work time on your own (the employees decides when they want to do some work, control the course of its performance and decide how they do this task).
- The remote work lets the employees regulate the work burden themselves and adapt it to their own biorhythm.
- The remote work makes it possible to adapt the work to the personal style of private life.
- The increase in the significance of the employee's responsibility for the result and for the process and applied technical means.
- The satisfaction of the work effects and work control increases.
- The remote work gives the possibility of better use of the employee's potential possibilities.
- The remote work offers the wider access to the differentiated labour market and eliminates commuting to work.

Whereas, the basic disadvantages of the remote work for the employee comprise (Janiec, Kreft, Piontek, 2006):

- The loss of the ability to relax.
- Distance from the health problems.
- Danger of workaholism.
- Addiction to the technical equipment.
- Lower promotion prospects (being outside the office, the employees cannot show their achievements).
- Work deorganization (no routine and orders may lead to inappropriate work organization).
- Lower access to trainings.
- Longer work day (telework may lead to the extension of the work day without remuneration).

The proper management of employees who perform such work by the managerial staff is an important element of the efficient performance of remote work by an employee. In practice such management should include the individual employee's situation, organization characteristics and the type of performed work. The typical activities covering such management comprise (CIOP, 2021):

- The detailed specification of tasks ordered to employees and the terms of their performance.
- Preparation of the individual work plan which should be discussed and agreed with the employee.
- The early identification of possible mental health problems appearing by employees performing remote work including addictions to technology, technostress, symptoms of fear or depression.
- Providing the employees with the possibilities of contact with immediate superior as well as urgent, regular feedback about the tasks performed by them and proposed changes in order to improve the efficiency as well as to submit positive opinions about performed work.
- Agreeing the unified system of informing about readiness to work and using it in practice.
- Dividing the bigger teams into smaller ones (in which everybody has clearly specified tasks and objectives, which increases the clarity of the employee's role and facilitates the cooperation).
- Preventing the work monotony by introducing the rotation of performed tasks and highlighting the meaning or wider context of their performance.

- Encouraging the employees to share information about the difficulties in order to detect them early and to prevent the occupational burden and burnout.
- Permanent monitoring of employees' professional skills in order to delegate the tasks properly and specify the needs in the scope of employees' training.

On the other hand, main advantages of introducing remote work for an organisation are in fact:

- Being independent of the local labour market (in the case of applying the remote work system there is no limit of employing workers in the local labour market and the company may search for workers in the territory of the whole country).
- Lower costs (the fewer people work in the office, the smaller the office may be and in connection with it the costs of renting the space are smaller).
- Greater flexibility (remote work enables to increase the employment without the necessity to introduce changes in the office organization).
- Relations with customers (remote work provides the fast access of the proper person to the customer which is performed independently of the time and place).
- Greater workers' discipline (remote work excludes coming late to work as you work at home in time appropriate for you). Additionally, there is no problem of sick leaves as workers staying at home may continue working.

Whereas the disadvantages of telework for employers comprise:

- High initial costs (creating the telework position requires that the company bears high expenditures in the short time, e.g. purchase of equipment, software and payments for using telecommunication links).
- Difficulties in motivating (in the situation when the worker is rarely seen, it is difficult to create the feeling of the company main aim and the financial motivation is the only form of motivation).
- Data protection (during the performance of telework the information concerning the company activity is not kept inside the company but is sent to the employee's house and back and in consequence, there is the risk of information leak during the communication process and it may be taken by the competition).
- Problems with calculating the efficient work time (the remote workers' remuneration is usually calculated according to the results of their work and not the time spent to perform it in order to avoid this problem).

The social benefits are also important aspects of performing the work relation in a form of telework. They comprise (Szluz, 2013, pp. 259-263):

- The employment chances for the disabled and the reduction of expenses for benefits connected with it, e.g. disability pensions.
- Reduction of unemployment connected with the creation of workplaces (also in the regions which are not well developed economically and have high unemployment which results in decreasing the expenses on unemployment benefits).
- Increase in the competitiveness for the companies employing teleworkers.
- Improvement in the environment protection, e.g. by reducing the amount of emitted fumes by the cars of commuters or reducing the use of paper.
- Improvement of the safety on roads (fewer cars means the reduction in the number of communication accidents).
- Integration of labour market in the world scale.
- Improvement of the interpersonal relations.
- Improvement of the company and employees' productivity.
- Facilitating the competitiveness of small and medium companies with the big ones.
- Creating the possibility to accelerate the employment reorganization.

4. The remote work in Polish companies in the light of study results

The state of epidemic lasting for longer time (and due to that the change to the remote mode of work for numerous employees of Polish companies) caused a big interest in this issue of many researchers and scientists. Its consequence is the fact that there appear numerous studies and reports which assess various aspects of this form of work relation (both from the employers' and employees' point of view).

For example the report¹ concerning the telework in the time of pandemic Covid-19 conducted in the Polish labour market (Dolot, 2020) shows that:

- Before pandemic the remote work was a rather rare phenomenon – 43% of the tested respondents worked at home only sporadically and 33% never worked at home (only almost 17% worked 3-4 days at home).
- During the pandemic almost 86% of tested respondents started the remote work for five days a week and 9% worked 3-4 days a week.
- According to the tested workers the positive consequences of the telework comprised mainly – time saving, work adaptation to personal needs and needs of the family, spending more time with family or combining the professional and personal obligations.

¹ The study was conducted on a group of 327 workers from big companies of the sector of services.

- The negative consequences of the remote work comprise – the lack of direct contact with coworkers, erasing the border between work and private life, the feeling of being all the time at work, resignation of breaks at work or problems with concentration in the presence of other flatmates.
- According to the tested respondents, the basic problems of telework are – no social contacts, feeling of isolation, presence of children's at home (taking care of them and learning with them), fear and scare connected with the future (making it difficult for the worker to concentrate) or finally weak internet connection.
- The employers provided employees at first with the appropriate equipment and other tools of telework (83% of surveyed responses), the workers received current information about what happens in the company (77%), the employers trained the workers to use the telework tools (75%). Only 33% of respondents were trained to organize their own work.
- The respondents working remotely expressed at first fears for decreasing their remuneration (53%), being dismissed from work (39%), loss of current benefits (34%) or the increase in the scope and amount of obligations (30%).
- 40% of respondents stated that they want to work 1-2 days a week remotely, 36% - telework on single days a week. Only 5% of workers wanted to work remotely for the majority of their work time.

Whereas, the study (Śliż, 2020) conducted in April 2020 among the employees of various organizations shows that:

- The respondents, in the scope of tasks performed during the telework, performed mainly the tasks connected with the communication with the company interested parties in a form of phone conversations or with the use of electronic mail and the tasks connected with the preparation of documents and the tasks connected with IT and e-teaching.
- 41% of the tested units declared that there are informal rules referring to remote work.
- A small number of organizations tested the possibility of remote work in case the crisis made it impossible to work in an office.
- The majority of respondents declared the choice of permanent working hours for work in an office (in the workplace) and flexible working time during pandemic.
- The respondents declared the amount of working time from 6 to 8 hours during pandemic.
- According to the respondents, the advantages of telework are – flexible working time, spending less time in the means of public transport and the possibility to join work with household chores.
- The limitations of remote work are – the lack of direct contact with superiors and the lack of concentration connected with the work at home and problems with separating work from family life.

Besides, the survey² concerning remote work during the pandemic Covid-19 conducted by K. Mierzejewska and M. Chomicki presents the following picture of the situation (Mierzejewska, Chomicki, 2020, pp. 35-42):

- Over 42% of the tested respondents had the provision of remote work included in the work relation as a basic or equal form of work provision (providing work in a remote form in a continuous way or at least one day a week). Less than 41% of respondents provided remote work less regularly and almost 17% of respondents did not provide remote work at all.
- The respondents indicated most often that their work provided in an office featured with the higher level of verve, dedication and preoccupation than when they provided it remotely.
- The respondents claimed that the lack of social contacts was the greatest disadvantage of telework and the decrease in motivation – the smallest one.
- The employees of public companies felt the inconveniences in providing telework due to the lack of direct communication and cooperation (almost 74% of answers) much more often than the employees of private companies (less than 43% of indications). It may be justified by the use of more advanced communication solutions by private companies (which replaced direct relations in a better way). Additionally, the more efficient structure of processes and the organization culture connected with it, the aim of which is at first to perform the tasks efficiently, might affect this situation.

The service Live Career.pl also conducted the survey study in 2021 concerning the respondents' opinion about the remote work³. The results of this study showed:

- 69% of the surveyed claimed that the greatest challenge of the remote work was to dissociate from work after finishing the obligations as well as motivate themselves to work and communicate with the manager and co-workers.
- 51% of the surveyed liked to work remotely whereas 45% claimed that telework affected the life – work balance in a negative way.
- According to the surveyed, the biggest pluses of telework are flexible work time and feeling of safety.
- Almost half (40%) of the respondents believed that the communication with the manager and co-workers deteriorated at the remote work and 20% claimed that it was better. Additionally, according to 1/3 of the surveyed the telework had a negative effect to the promotion prospects or the possibility to get a pay rise and 1/5 of the surveyed noticed that it was easier to get them in such a mode of work.

² The study was performed with the use of CAWI method in the group of 215 respondents. Over 69% of respondents' employers were the companies without foreign capital and the other 31% - companies with the share of foreign capital. Over 79% of respondents' employers comprised private companies and only 29% - public companies.

³ Over 700 respondents took part in the survey.

After the end of pandemic 38% of the surveyed would like to continue working remotely but only 12% declared that they would leave their work if the employer did not let them continue teleworking. Additionally, 30% of the surveyed claimed that they would start work by the employer who would provide them with the opportunity to work remotely in the future.

5. Conclusion

It should be assumed that the remote work widely used at present will probably not finish with the end of the pandemic Covid-19. The organizations which want to compete at the market – in particular in various crisis situations – will have to launch telework. The use of telework will cause that the companies will decrease the office space (the decrease in costs connected with the service of offices) or that some processes will get accelerated or will be more effective (with the use of the appropriately selected tools for remote work). The employee will get additional financial means which were spent on commuting before and will also get some time. However, the organization will have to provide the employee with appropriate competences (especially concerning the knowledge of tools necessary for on-line work) so that the workers could provide the remote work efficiently. It will also require the remodelling of internal communication in organizations and training the employees in this area as well as introducing changes in their internal regulations.

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SUSTAINABLE MANAGEMENT AND ORGANISATION OF THE WORK ENVIRONMENT IN THE CONTEXT OF FLEXIBILITY PARADIGM

Marzena PYTEL-KOPCZYŃSKA

Czestochowa University of Technology, Management Faculty; marzena.pytel-kopczynska@wz.pcz.pl,
ORCID: 0000-0001-8850-858

Purpose: The purpose of this article is to analyse the quality of the human – work system in the context of modern organisation management paradigms focused on theoretical aspects of sustainable growth in which flexibility gets the crucial condition to meet each company's objectives specified by this growth.

Design/methodology/approach: It is an opinion article, the attempt to interpret the correlation between the high quality of work environment indicated by the goals of Agenda 2030 and the organisation flexibility dimensions presented in literature which imply the growth in efficiency and effectiveness of work potential management. The study was developed on the basis of the regular and critical literature analysis.

Findings: The considerations presented in the article indicate that the achievement of high efficiency and effectiveness level in organisation in the era of postglobalisation and Coronavirus is only possible when the high organisation flexibility is guaranteed, and the flexible initiation of innovative changes depends on optimising the management of work potential. The need of flexible creativity in the company, being a reaction to the radical redefining the human functioning in an organisation, is required on all levels of each company functioning arising from the view that the general organisation flexibility is conditioned by partial flexibilities.

Originality/value: The value of this paper is theoretical. The possibilities of obtaining various kinds of flexibility by a company were determined in the context of developing the human – work system and its influence on the total growth of organisation abilities. It was presented that the flexible organisation competences guaranteeing the proper organisation processes, condition the increase in flexible skills in a positive way, which contributes to the more flexible activities adapted to the permanent and turbulent changes in the company external surroundings. This article is addressed to the people interested in the multiaspect problematics of the academic issue, the obtained results may be the inspiration to further research.

Keywords: efficiency, work potential, work environment.

Category of the paper: Viewpoint, General review.

1. Introduction

The flexibility paradigm is used both to describe the categories of the labour market (e.g. flexicurity concept) (Pyrek, 2012), companies (flexible human resource management, flexible work processes, flexible employment forms) and employees (work – life balance, individual career). The basic reasons to make work flexible are based on the application of cost mechanism (rationalisation of work costs), social mechanism (influence of the work place, individual needs of employees) and efficiency mechanism (streamlining of organisational processes to achieve better economic effects).

The turbulence of the surrounding is a significant factor which conditions the limits of organisation flexibility (Buganza et al., 2009). It is the element which affects the variability of internal relationships in the organisation the most and the power of this influence is usually higher than the flexibility level which the given organisation achieves. The turbulence of the surroundings may be described by the assessment of the variability of the given surrounding in relation to two theoretically extreme states commencing from the constant, permanently unchanged, and finishing on permanently unpredictable surroundings even in very short time periods (Grajewski, 2014). In practice, the organisations are usually between these extreme points. The solutions increasing the organisation flexibility as an open system, communicating with the surrounding, are based on the increase in its reactivity in the context of customer's needs. It means that as a result of the measurement of respondents' internal expectations, the organisation response may be responsive, i.e. adjustment reaction to the changes in the surroundings and in the organisation or pro-active, i.e. ahead initiation of changes in management processes in relation with the simulation of the future.

The organisation ready for the challenges of future thanks to considering employees' demands and professional aspirations is able to perform potential benefits. Numerous results of scientific studies and analyses confirm this thesis. The most important attributes of the enterprise of the future refer to its ability to form the enterprise strategic goals on the basis of the paradigm of new globalisation in the era of turbulences and deep changes (Kotler and Caslione, 2009), transforming the simple product manufacturing into a complex system of services focused on streamlining all business processes as well as developing the management of competences, employees' creativity in the friendly work environment (Karwowski, 2010), the environment integrated with Industry 4.0 model (Machado et al., 2019) and creation of super-intelligent society 5.0 (Fukuda, 2020; Cyfert, 2020). It gives new light to the role of holistic, anthropocentric approach in the process of shaping human – work systems. The approach focused on a human being contributes to streamlining business processes, designing tasks, products, environments, work systems by harmonizing them with the needs, possibilities and limits (cognitive, physical, sensual and organisational ones) of all organisation participants. Thus, the work issue as well as the forecasts of its changes concerning the

implementation of the sustainable development rules get really significant. The literature shows that the basis of sustainable development is the simultaneous and synchronic performance of objectives in the areas: social, ecological and economic ones. The UN General Meeting (consisting of 193 countries) created a final document entitled “Transforming our world: the 2030 Agenda for Sustainable Development”. It occurred on the Sustainable Development Summit in New York in 2015. The indicated goals are based on three coherent fundamentals: economic growth, social inclusion and environmental protection. The performance of the above goals means the performance of the 2030 Agenda Goals which clearly claims to ensure healthy lives and promote well-being for all at all ages (goal 3) and to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (goal 8) (Zakrzewska, 2019).

In this context the sustainable management and work environment organisation with the consideration of flexibility prospects becomes a significant and important issue thanks to which it is possible to raise the effectiveness of each enterprise with the simultaneous respecting of business sustainable development challenges, social responsibility, environmental aspects (both of the external and internal environment) and actions for the benefit of people, interested parties of a given organisation.

2. Flexibility imperative in shaping work potential

The acceptance of the flexibility paradigm is an imperative to develop the work potential¹. Flexibility as the source of organisation success is identified with creating higher value by mobile – nomadic human potential stressing both the ability to take new challenges and the ability to make employee changes as well as the ability to anticipate, initiate and implement the innovative solutions actively (Kasiewicz et al., 2009). Flexibility means the ability to deal with the complexity and variety of the surroundings. Flexibility initiation of innovative changes, in the context of organisation development and achieving competitive advantage, requires the modern approach to the management in the human zone, appropriate for the human resources management concept (Banfield and Kay, 2008), contrary to the status quo and stability characteristic for the staff management idea by changes in organisation structures and practiced techniques. It should be noticed that there are three basic flexibility context in human potential

¹ Work potential consists of human potential (potential of employees, their knowledge, practical skills, mental predispositions, health condition and motivation to work) and of work time (form of the work time organization, use of the disposed work time). Time is a quantitative dimension of work potential and human potential is its qualitative dimension (Gableta, 2006, p. 17).

management² and namely: quantitative, functional and financial one (Juchnowicz, 2016). Quantitative flexibility means the ability to harmonise competitive potential with the work type and its time, significant to build flexible organisational structures and to diversify forms of work provision (i.e. correction of the condition and structure of competitive potential which is consistent with the labour law). It is also worth stressing that the flexibility of organisational structure can be compared with the shamrock organisation (Handy, 1989, after: Rahnavard, Bakshandeh, 2013) in which the subsequent leaves specify the subsequent employees' categories. Ch. Handy formed and popularised the shamrock model at the end of 20th century defining the scope of flexibility of offered work positions and tasks and activities performed at them in relation to the labour force flexibility. The first group covers managers and qualified technicians and specialists, i.e. key employees thanks to whom the company may operate in the market efficiently. The second group are subcontractors and the third – seasonal employees who may be employed in a flexible way to support the core activity. This form of flexibility depends on the type of work, required special qualifications and time work organisation. It may take the form of work provided in a form of agency contracts, employee leasing, tolling agreement (little level of flexibility), job on call, contract of post-graduate internship (medium level of flexibility) as well as civil law contracts (commission contract, contract work), management contracts, telework and remote work, outsourcing (high level of flexibility) and also a lot of benefits connected with the implementation of home office, which was confirmed in the economic practice of Covid-19 pandemic (Messenger, 2019; Dolot, 2020). In turn, functional flexibility refers mainly to knowledge organisation and small companies with flat structures and low formality level. It means transferring employees to various tasks and project groups requiring so called multifunctionality at the same time, the effect of which is enrichment of employee's competence potential rising its attractiveness at the labour markets by lifelong learning (Opiela, 2019), extension of specialisation and multifunctionality. Investing in the development process of employees' competence is anticipative and refers to current career path which is a dynamic connection of numerous stages of professional experience, vertical and horizontal promotions in short- or long-run contributing to the personalised career modelling, respecting personal life (parental leave, health breaks, care for the elderly, gradual retirement, etc.). Whereas, financial flexibility relates to shaping employee remuneration systems with the consideration of the financial situation of the organisation and all stakeholders' needs and aspirations both the key employees as well as co-workers supporting the core activity.

² Human resources which the modern organisation possesses cover not only workers employed on the basis of the labour relationships (employment, designation, appointment or service relationship contract) but also self-employed, subcontractors performing tasks for the organisation within outsourcing, contractors, freelancers.

3. Sustainable management and work environment organisation

The imperative of organisation flexibility which is beneficial to develop employees' competences, contributes to the diversification of work contents according to the evolving demand in the labour market (Rönmar, 2004).

Thus, the term of flexibility refers, however vaguely, to the description of the work organisation characterising it as the way to model work contents, time and place and forms of work provision which guarantee immediate, effective (time criterion), adequate to circumstances (diversity criterion) and economically beneficial (criterion of resources and effects) functioning, trying to maintain a dynamic balance in work performance in the context of achieving measurable financial results as well as immeasurable social effects.

The increasing diversification of tasks and activities in work positions, increase in new tele-information technologies enabling the transfer of information and knowledge or offering products and services to consumers in real time are arguments of leaving the strongly hierarchic organisational structures in favour of their flattening and of greater flexibility of work organisation, the practical examples of which constituted the solutions of digital technology, among others ITC technology, enabling the use of virtual offices, virtual work places in the time of Corona crisis.

Hence, flexibility³ which is expressed in production methods, work organisation and employment forms is the attribute of modern global economy. Company need for Flexible Time Management (Malara, 2006) is caused by the need of the productive time use of machines and devices, optimal use of organisational potential depending on the fluctuations of the business cycle, idea of creating new customers' needs and customs (e.g. opening the service units in atypical hours, on free days, etc.). The permanent changes on the product and service markets connected with quality requirements contribute to the creation of more and more efficient operating resources and more flexible and reliable production methods.

In consequence, the adapted forms of work organisation have to be more adjusted to the dynamic changes in the work demand trying to use the work time resource⁴ in the most possible way to achieve the assumed aims of the organisation. The flexibility areas should be indicated in the work organisation area and namely (Mielnik, 2012):

- Work content (range of tasks and activities).
- Work time (time schedule).
- Work space (place of work process performance).
- Work status which is connected with the determination of the employment relationship covering various forms of work performance included in Labour Code.

³ Flexicurity concept is connected with market flexibility with social security.

⁴ The document Green Paper "Partnership for a new organisation of work" (The European Commission, 1998) states that flexible time management may be beneficial for employers and employees as long as the changes are initiated in a negotiated way, whereas European trade unions distinguish positive and negative flexibility (Machol-Zajda, 2008).

The following features may be listed among the most often applied flexible solutions in regard to work forms and its organisation: part-time job; divided work; flexitime; cumulated working hours; system of annual work time; work from home (tolling contract); tele-work; contract work (e.g. management contract); on-call contract; temporary work; self-employment.

The results of the comparative research referring to the flexibility of work organisation carried out in Poland and Lithuania present an interesting example (Fryczyńska, 2016, pp. 39-40). The surveyed Lithuanian respondents employed on the basis of the employment agreement indicated four times more often the answer that the organisations overuse the employment forms on the basis of civil law contracts in comparison to Polish full-time employees. Additionally, among the ones employed on mandate contract, contract work, management contracts, over a half of Polish surveyed stressed that there is excessive use of untypical employment, Lithuanian respondents had a similar opinion despite the fact that only 9% of Lithuanian tested population constituted the ones who were employed on the basis of civil law contracts. The present research results lead to the conclusion that the workers employed on the basis of the contract belonging to untypical forms of work performance confirm dissatisfaction with such work. What is interesting, respondents who are employed on the basis of contracts belonging to inflexible forms of work performance (employment agreement, on managerial positions) express their approval to non-standard forms of work performance. The mentioned empirical research emphasises the necessity of correlation between the employees' needs and employers; needs concerning the implementation of non-standard forms of employment⁵, which should bring mutual benefits.

The high flexibility and adaptation rate of the system human being – work providing the speed of activity and the basis of innovativeness and creativity requires the decrease in formalisation, decentralisation of decisive rights, reduction of the number of hierarchy ranks, limitation of standardisation and procedures to the possibly smallest, necessary and required number. Assuming that the employees' freedom in the way of work performance (work content) is the dimension of work flexibility, the Empowerment (EMP) approach, based on the empowerment (validation) of the executive group, should be adapted. This concept consists in

⁵ It should be also stressed here that in relation to the research presented in the literature (Cymbranowicz, 2016) unjustified, excessive, disproportionate use of flexible solutions concerning human potential management may bring undesired effects for the organisation in a form of various dysfunctions, i.e. employees' discouragement to participate in professional development, lower involvement, no feeling of stabilisation and job security, unwillingness to share knowledge, disruptions in the persistence of organisational knowledge and thus, lower quality of human capital. In the micro perspective, it causes the unfavourable organisational climate, antagonistic relationships in work process because there is a division of employees into two groups in the company and namely privileged employees having labour agreement for an indefinite time period, definite time period or appointment and unprivileged employees who cannot take advantages in a form of subsidised trainings, medical benefits or job security. From the macro perspective, in the social and economic context, it causes too big migration of highly qualified employees, high level of long-term unemployment, the syndrome of unemployment heritage, lowering the rate of fertility. The above factors contributed to the creation of a new social class that is "unsecure of their future" specified as workingpoor or precariat. The phenomenon of the appearance of a new social group which is difficult to define but possesses a common feature which is employment precariousness (En. precarious, Fr. précarité).

the participation of executive employees in a decision-making process, delegating the rights and responsibility for the work performed by them and guaranteeing them knowledge and skills necessary in the work process. The employees using their knowledge and having decision-making rights may notice and react quickly in the process connected with the improvement of products at their work positions, which leads to the reduction of losses as well as increases the number of innovative solutions in the area of quality. Empowerment means "...allowing the employees to think independently, use their knowledge, experience and motivation to fulfil the requirements arising from the three key issues in the company and namely: being a supplier by choice, employer by choice and place of investment by choice" (Randolph, Blanchard, 2007, p. 57). Employees' empowerment refers to the current alternative for technocratic management, which is personalistic and servant leadership in which the role of the leader is not based on power privileges for it but moves towards the more complex, strategic participative process typical for servant leaders. The performance of the management function stimulates the strong need of cooperation and involvement by executive employees in efficient, agile, modern organisations and leadership, at each management rank, is based on the system of organisation values, supports the attitude of asking questions and discovering, being the teachers and learners at the same time, focusing on the attempt to be perfect. Empowerment means both giving somebody right to do something as well as supporting employees in getting power from their knowledge, experience and internal motivation by creating the appropriate organisational climate. The basic components of this concept are (Czajkowska, 2008, pp. 150-157): feeling of possessing abilities and competences (self-efficacy); feeling that one can decide about himself (self-determination); belief about the possibility to affect others (personal consequence); feeling that what one do is valuable (meaning); trust. Randolph, Blanchard (2007) present empirical effects of using the empowerment in the organisation in a way of economic profits of companies. They confirm that organisations in which the employees had greater control and responsibility obtained higher return on sales (10.3%) than the organisations which failed to use the employees' involvement (6.3%). Thus, empowerment will be the key solution for organisations functioning.

Work potential which is created by knowledge workers equipped with the ability of flexible time management (Sardinha et al., 2020) conditions the organisation ability to transform in a learning, creative, innovative and flexible organisation. Possessing vast autonomy in the jobs performance, knowledge workers have high level of responsibility for the effects of their actions in the context of customer's expectations and their comparison with the performance abilities of a given process. Work process is participative, which contributes to the easier acceptance of changes because employees participate in designing them. Flexible structural solutions of learning organisations are obtained thanks to subtle division lines between superiors and subordinates, recipients and suppliers, organisation and surrounding as well as thanks to efficient information system providing appropriate information, in proper time to proper management levels.

4. Conclusion

Economic development characterises with not only quantitative features included in the production growth (growth of GDP) but also it is expressed in the qualitative changes, structural, system and institutional changes. Work potential the basic element of which is human capital is a common and the superior factor of the performed transformations. Whereas, organisation competitiveness strongly depends on the efficiency of the individual business processes, applied management systems functioning on the basis of sustainable management paradigm and work environment organisation. Obtaining high level of efficiency and effectiveness in the company in the era of post-globalisation and Corona crisis is only possible when the organisation provides high flexibility focused on creating value for widely understood customers both the internal and external ones. Summing up, the complexity of the multidimensional interactions in the work environment implies that *probably for the first time since the industrial revolution the success in business is becoming completely dependent on optimisation of workers' potential management* (Hamel, 2007, after: Karwowski, 2010, p. 11) employed in the friendly work environment, integrated with the model Industry 4.0 and anchored in the creating super-intelligent society 5.0. Moreover, future competitive environment in which the flexible, intelligent organisation works forces the adaptation to the needs and expectations of people, all interested parties, according to the best practices of Corporation Social Responsible included in the concept of sustainable development.

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APPLICATION OF QFD IN THE PHARMACEUTICAL INDUSTRY

Paulina RASZEWSKA¹, Radosław WOLNIAK^{2*}

¹ Politechnika Śląska, Wydział Organizacji i Zarządzania, Instytut Ekonomii i Informatyki

² Politechnika Śląska, Wydział Organizacji i Zarządzania, Instytut Ekonomii i Informatyki; rwolniak@polsl.pl,
ORCID: 0000-0003-0317-9811

* Correspondence author

Purpose: The aim of the paper is to analyze the problems connected with the audit and management review within the organization in the ISO 9001:2015 implementation process.

Design/methodology/approach: Critical literature analysis. Analysis of international literature from main databases and customer research and expert analysis.

Findings: Audits are very useful tool to analyses the organization functioning and improve it's performance. On the basis of the conducted analysis we can say that the main activities needed in the internal audit process are: interview personnel, observe operations, review documents and records and examine records. In the audit process is especially important for auditor to have appropriate qualities. They should be according to ISO 19011 requirements. The best solution for the analysis of the performance of ISO 9001 system can be done when we not only use internal audits but also management reviews in our managerial practice.

Originality/value: Detailed analysis of possibility of use of QFD method in pharmaceutical industry.

Keywords: quality management, ISO 9001:2015, ISO 9001, performance, KPI.

Category of the paper: research paper.

1. Introduction

The QFD method is used to relate customer needs and requirements to the technical features of a product. It has been used in many areas to design products that will be better adapted to customer needs. This article shows the application of the QFD method in the pharmaceutical industry – one of the strategic and very important industries in the modern economy.

The aim of the publication is to analyse the possibility of using the QFD method in the pharmaceutical industry on the example of a tablet.

2. Literature review

The QFD method was developed by Japanese engineers to ensure product quality as early as the product design phase. During the Second World War, the Japanese economy suffered huge losses (Wolniak, 2019). After the war, production was based mainly on making low-quality copies of American products. Then, under the influence of ideas presented by Deming and other quality management specialists who came to Japan, Japanese engineers realised that only innovative products of high quality could ensure their success.

QFD can be defined as: a method of planning and developing a project or service that enables research teams to precisely specify customer needs and requirements and then translate them into the parameters of a product or service, its components and the parameters of the production process itself (Ćwiklicki and Obora, 2008).

The QFD method is often categorised as a marketing research method. However, QFD is more than that, as it is used for structured planning and development of a product or service, enabling research teams to make a precise specification of customer needs and expectations, and then to evaluate each proposed opportunity from the perspective of its impact on satisfying the postulated needs (Łuczak and Matuszak-Flejszman, 2007).

The main element of the method is the so-called "House of Quality". (House of Quality). It is named so because of the specific shape of the diagram. "House of Quality" is defined as the first matrix used in the QFD method (in the basic version of the method the only one), which is used to present the relations between customer needs and technical attributes of the product. QFD is a multi-step planning process aimed at fully satisfying customers, including internal customers, i.e. the company's employees (Francheschini, 2002).

In the figure 1 we present the conception of House of Quality. Particular fields mean parts of information's used in the QFD conception:

1. Customer specification.
2. Customer importance.
3. Maximization, minimization or optimization of engineering specifications.
4. Engineering specifications.
5. The significance of engineering specifications.
6. Relations between engineering specifications.
7. Comparative assessment of customer specification.
8. Comparative assessment of engineering specifications
9. Importance weight.

The QFD method can be used in many different industries. The basic conception of potential usage of the method was presented in the figure 1. We can find many examples of using this method for example to following problems:

- automotive industry (Wolniak, 2016),
- medical services (Wolniak, 2012),
- machine industry (Zymonik and Wąsińska, 2007; Jiao, 2021),
- sustainable engineering solutions (Rihar and Kusar, 2020),
- proecological analysis (Wolniak and Sędek, 2009; Lin et al., 2010),
- SMEs management (Hwangbo, et al., 2020);
- food industry (Tarczyńska, 2013),
- workplace planning (Wiśniewska, 2006),
- increase of innovativeness (Wolniak, 2016),
- supply chain management, Dai and Blackhurst, 2012).



Figure 1. Areas of application of the QFD method. Source: own study based on: (Raszewska, 2017).

In this paper we concentrate on the usage of QFD in pharmaceutical industry. The topic was described in some publications noted in Scopus database (Karpova and Khomutova, 2018; Nwabueze, 2012; Alinezad et al., 2013). But authors concentrated mainly on supply chain management in pharmaceutical industry not on the problem of pills production. The pharmaceutical industry is a complex processes, operations and organizations involved in the discovery, development and manufacture of drugs and medications. This industry in particular is challenged by constant advancement of its development and production functions.

This industry takes now a second lead among the most profitable industries in the world (Gomez and España, 2021). Because of that is very important and we think worth investigating from various perspectives.

3. Results

In order to perform a QFD analysis for the tablet, 12 customer attributes were selected which are:

- safety of use,
- price,
- effectiveness,
- shape of tablets,
- tablet packaging,
- marketing instruments,
- colour of tablets,
- form of tablets,
- leaflet accompanying the tablets,
- flavour of tablets,
- brand,
- size of tablets.

The above-mentioned customer attributes were grouped into 3 categories, which are shown in Table 1.

Table 1.
Grouped customer attributes

| Performance features | Appearance characteristics | Other features |
|---|---|---|
| Safety of use, effectiveness, form, taste | Shape, colour dimension, size, tablet packaging | Price, brand, marketing instruments, leaflet accompanying tablets |

Source: own study based on: (Raszewska, 2017).

In the next step, a survey was carried out in which customers rated the importance of the individual attributes. Table 2 shows the results of the survey.

Table 2.
Survey results

| Lp. | Customer attribute | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Sum |
|-----|-----------------------|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | Price | 5 | 10 | 10 | 10 | | 20 | 25 | 20 | | 20 | 120 |
| 2 | Safety of use | 22 | 20 | 15 | 10 | | 25 | | | | | 92 |
| 3 | Packaging of tablets | 18 | 10 | | 10 | | 5 | | 5 | | | 48 |
| 4 | Effectiveness | 20 | | | 20 | 50 | 30 | 5 | 30 | | 45 | 200 |
| 5 | Shape of tablets | | 15 | 25 | 10 | | | 40 | | 60 | 20 | 170 |
| 6 | Marketing instruments | | 30 | | 5 | 10 | | | 5 | | | 50 |
| 7 | Colour of tablets | | | | 10 | 10 | | | 10 | | | 30 |

Cont. table 2.

| | | | | | | | | | | | | |
|-----------|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 8 | Tablet form | 10 | 5 | 40 | 5 | 25 | 15 | 20 | | 25 | 5 | 150 |
| 9 | Leaflet accompanying the tablets | 5 | | | | | | 10 | 10 | 5 | | 45 |
| 10 | Flavour of tablets | | | | 15 | | 5 | | 10 | | 10 | 25 |
| 11 | Brand name | | | | 5 | 5 | | | 10 | | | 20 |
| 12 | Tablet size | 20 | 10 | 10 | | | | | | 10 | | 50 |
| | Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1000 |

Source: own study based on: (Raszewska, 2017).

Table 3 shows the hierarchical customer attributes by assessment.

Table 3.

Hierarchical customer attributes by evaluation

| Customer attribute | Assessment |
|----------------------------------|--------------------|
| Effectiveness | 200 |
| Tablet shape | 170 |
| Tablet form | 150 |
| Price | 120 |
| Safety of use | 92 |
| Marketing instruments | 50 |
| Size of tablets | 50 |
| Tablet packaging | 48 |
| Leaflet accompanying the tablets | 45 |
| Colour of tablets | 30 |
| Flavour of tablets | 25 |
| Brand name | 20 |
| Total | 1000 points |

Source: own study based on: (Raszewska, 2017).

Table 4 shows the weights for each customer attribute. The weights were evaluated on a scale of 1-10 and given hierarchically from 10 for the highest customer evaluation value to 1 for the lowest values. Since for the lowest rated attributes the ratings were similar it was considered possible to assign a value of 1 for the three lowest rated attributes.

Table 4.

Weight of customer attribute

| Customer attribute | Assessment | Weight |
|----------------------------------|--------------------|--------|
| Effectiveness | 200 | 10 |
| Tablet shape | 170 | 9 |
| Tablet form | 150 | 8 |
| Price | 120 | 7 |
| Safety of use | 92 | 6 |
| Marketing instruments | 50 | 5 |
| Size of tablets | 50 | 4 |
| Tablet packaging | 48 | 3 |
| Leaflet accompanying the tablets | 45 | 2 |
| Colour of tablets | 30 | 1 |
| Flavour of tablets | 25 | 1 |
| Brand name | 20 | 1 |
| Total | 1000 points | |

Source: own study based on: (Raszewska, 2017).

From Table 4, it can be concluded that the most important customer attribute is the effectiveness of the tablets with a total score of 200. The second most important customer attribute is the shape of the tablets.

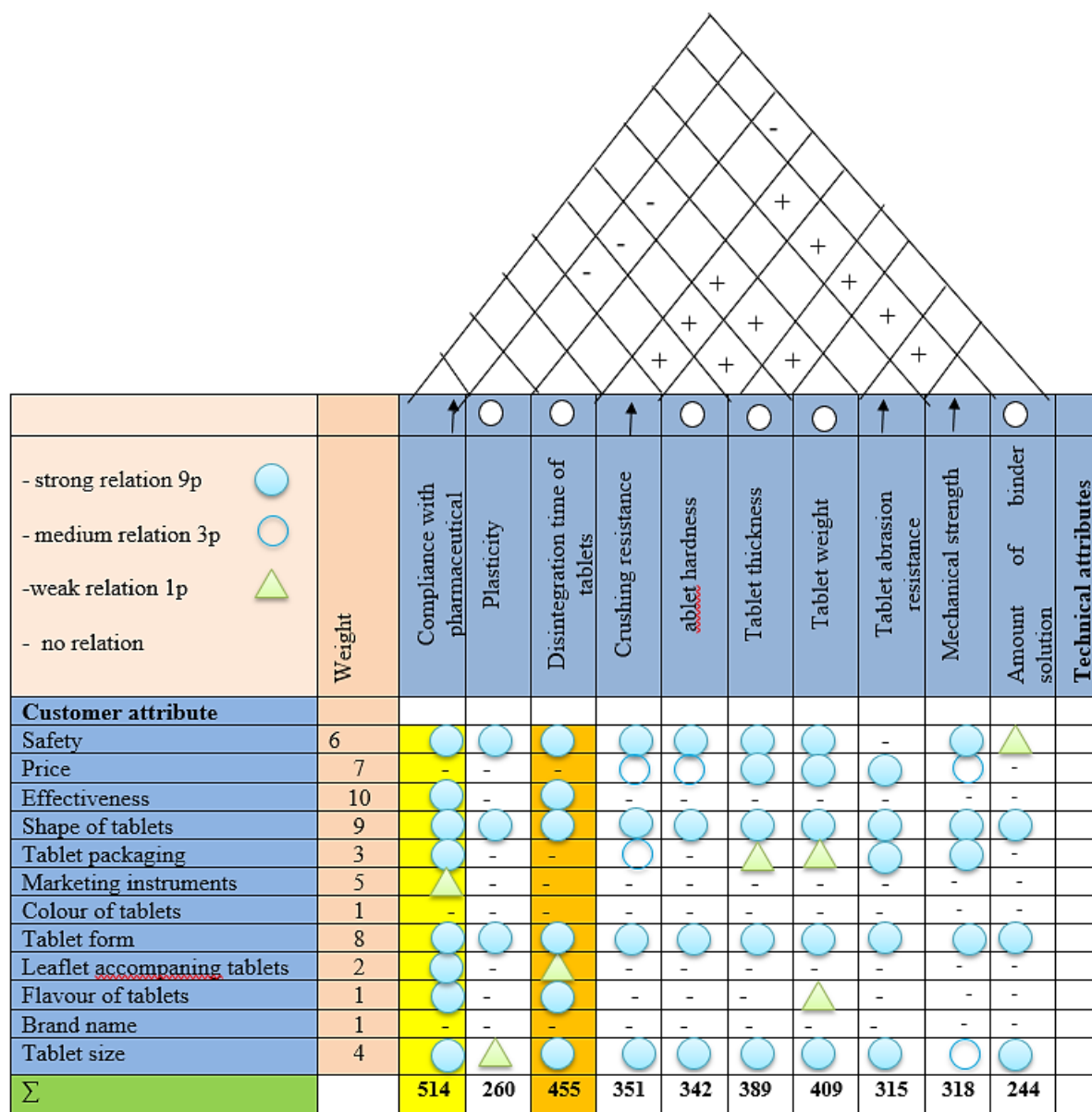


Figure 2. QFD analysis of tablets attribute. Source: own study based on: (Raszewska, 2017).

Links between customer attributes and technical attributes:

- Taste of tablets and tablet disintegration time – Drug Formulation Technology article, Orally disintegrating tablets. Research directions, technologies. The rapid disintegration of a tablet depends on the correct choice of excipients. This is achieved by the use of bulking agents, binders, bursting agents, glidants, hydrophilisants and flavour enhancers. Due to the need to develop formulations with short disintegration times, particular attention is paid to the selection of substances with disintegrating properties.

- Tablet size and disintegration time – article Drug Formulation Technology, Orally disintegrating tablets. Research directions, technologies. Disintegration time dependent on tablet size and shape.
- Content of drug substance, uniformity of drug substance, stability, rate of drug substance release, amount of impurities – Doctoral dissertation from Jagiellonian University. The criticality of the influence of process operating variables on product quality depends on the technological procedure used. In the case of high-speed granulation, the criticality of the influence of the following operational parameters was found: amount of binder solution, main stirrer rotational speed, granulation time. In terms of the research carried out, no criticality of the influence of fluidised bed granulation variables on product quality was found.

On the basis of the conducted QFD analysis it can be concluded that the most important attributes of a tablet according to the customer are its efficacy and shape. Apart from that, the results of the analysis carried out show that such technical parameters of tablets as compliance with pharmaceutical law requirements and tablet disintegration time are the most important. The disintegration time of tablets is directly connected to the size and shape of tablets. The rapid disintegration of the tablet also depends on the appropriate choice of excipients. This is achieved by the use of bulking agents, binders, bursting agents, glidants, hydrophilising agents and flavour enhancers. Due to the need to develop formulations with short disintegration times, particular attention is paid to the selection of substances with bursting properties. Figure 3 shows the innovative design of a tablet shape for heart disease.



Figure 3. Heart disease tablets in a blister socket. Source: own study based on: (Raszewska, 2017).

4. Conclusion

The analysis conducted in this publication has shown that the QFD method can be successfully used in the pharmaceutical industry for analysis related to the design of customised tablets. The conducted research showed that the most significant parameters of a tablet from

the point of view of customer needs are its effectiveness and shape. After the analysis and linking of customer parameters with technical parameters, it turned out that the most important technical parameters are: meeting the requirements of pharmaceutical legislation and tablet disintegration time. It is also worth noting that the disintegration time is related to the size and shape of the tablet.

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THE RESTRICTIONS OF HUMAN RIGHTS – COVID-19 PANDEMIC AND ETHICAL ISSUES

Lukáš SIEGEL

Department of Philosophy and Applied Philosophy, University of Ss. Cyril and Methodius in Trnava;
lukassiegel@gmail.com, ORCID: 0000-0002-4283-3508

Purpose: The purpose of this article is to analyze some of the most significant ethical and human rights impacts of the COVID-19 pandemic. The analysis aims to demonstrate the failures of many political decision that lead to restriction and limitation of human rights.

Design/methodology/approach: We analyze various documents, reports and news articles that provide essential information about the different governmental restrictions that may lead to controversial human rights issues. We also use some philosophical texts to support our theoretical basis for the defence of human rights. Overall, we aim to find some of the groups that were vulnerable during COVID-19 pandemic and describe some of the human rights concerns and ethical issues.

Social implications: We hope that our article will impact political regulations and restrictions that can have severe human rights implications. We also hope to inspire citizens, scientists and politicians to uphold and protect human rights and dignity during COVID-19 pandemic.

Findings: In our article, we have found that many countries had problems with creating rules, restriction and regulations that are upholding and protecting human rights or did not have ethical implications. We have also found that many vulnerable groups were disadvantaged because regulations did not take into account their precarious position.

Originality/value: We have analyzed the ongoing ethical and human rights problems with the COVID-19 pandemic because we believe that they present some of the most fundamental challenges to our society. Our analysis tries to demonstrate some of the most fundamental human rights issues and proposes to address these issues to avoid any future failures.

Category of the paper: Research paper (ethical/human rights analysis).

This study was created with the support of the civic organization dakujeme.sk and aims to analyze the negative impacts of COVID-19 on socially excluded groups.

Introduction

The COVID-19 pandemic has created many unforeseen scenarios and situations. Countries reacted differently as some created strict rules and regulations while others waited until the situation got much worse. Some countries were more prepared, and some lack the resources for the protection of the citizens. Our analysis aims to demonstrate several of the problematic measures taken by states and to provide feedback that could be useful for future scenarios. For instance, we are going to focus on minorities, women's rights and people with disabilities. We will be using various articles, reports and human rights publications that will enable us to understand the consequences of these restrictions. We will investigate some of the concrete cases and establish several examples of human rights concerns, or at least what was considered by various international organizations to be a violation of human rights during COVID-19 pandemic. The issue is that states often do not consider these extreme measures to be contradictory with regards to the protection and upholding of human rights. We will also focus on analyzing human rights issues and will try to formulate recommendations for governments. We do not want to argue that our pieces of advice are flawless and most effective, but we want to demonstrate that states can always choose to uphold human rights while implementing some restrictions or regulations.

COVID-19 – specific examples of human rights problems

Our analysis starts with the report from Amnesty International about the COVID-19 pandemic and the impacts on human rights. The report, "Policing the pandemic: Human rights violation in the enforcement of COVID-19 measures in Europe" from June 2020 demonstrates concerns about the upholding the human rights within the European countries. In the introduction, it is written that "states must implement less restrictive measures to ensure compliance with the restriction, including a sufficiently robust public information campaign" (Policing the Pandemic..., 2020, p. 5). However, this was not the course of action for many states during the beginning of the COVID-19 pandemic. Many countries used prejudices, stereotypes and fear as a guide towards forming protective policies (as was shown by many human rights reports and articles). These policies lead to discrimination of certain groups that were left vulnerable during the COVID-19.

We will now analyze concrete examples of discrimination during the COVID-19 pandemic against certain minorities. For instance, Roma communities were the target of many preventive measures. Many human rights organizations or media outlets¹ criticized these measures against Roma communities. These outlets investigated the positions of Roma people and point towards discrimination and lack of basic care during various lockdowns and restrictions. Similarly, the report from Amnesty International mentions several countries that failed to protect human rights of Roma communities. For instance, in the case of Bulgaria, the report says: "The lockdown applied nationwide. However, local authorities in several municipalities issued ordinances imposing a special regime, including mandatory quarantines, specifically targeting Bulgaria's Roma community. These quarantines were enforced by armed police" (*Policing the Pandemic...*, 2020, p. 10). A very similar situation existed in Slovakia, where Amnesty International criticized specific measures that were used for the Roma community. The report says: "the authorities placed five Roma settlements under mandatory quarantine enforced by the police and the military, arguing that this containment was necessary to prevent the spread of COVID-19" (*Policing the Pandemic...*, 2020, p. 16). The people from these settlements claimed that there were many issues with the protection of their rights and freedoms. The final part of the Amnesty International report says: "In addition to the allegations of unlawful use of force, Amnesty International has documented that during the first days of the mandatory quarantine of the five Roma settlements, residents were not given information about the duration and the conditions of the quarantine and that the authorities did not separate those who had tested positive for COVID-19 from the rest of the community" (*Policing the Pandemic...*, 2020, p. 17). These two countries serve as an example of the human rights concerns that were present during COVID-19 pandemic towards Roma² community in Europe.

¹ For more, see article: *The Roma are among most threatened by coronavirus in Europe* (2020) by Shannon Pfohman and Thomas Hackl, <https://www.euractiv.com/section/coronavirus/opinion/the-roma-are-among-most-threatened-by-covid-19-in-europe/> or *Europe's Roma people 'left behind' during coronavirus pandemic* (2020) by Isabel da Silva, <https://www.euronews.com/2020/07/08/europe-s-roma-people-left-behind-during-coronavirus-pandemic>.

² For more examples, see the report *"Coronavirus pandemic in the EU – Fundamental Rights Implications – Bulletin 4"* by European Union Agency for Fundamental Rights. In this report, they mention other difficulties that the Roma community is facing during the COVID-19 pandemic. For instance, the report mentions problems with clean water, sanitation or vulnerability of Roma children (*Coronavirus pandemic in the EU – Fundamental Rights Implications – Bulletin 4*, 2020, p. 30).

Women as vulnerable group during COVID-19 pandemic

Another vulnerable group during the COVID-19 pandemic are women that suffer from domestic violence (Kuzior et al., 2021). During the lockdown, people were required to stay at home and women were often left vulnerable with abusers. Women and children often suffered because of these circumstances, and many governments failed to deliver proper protection. For instance, different international organizations urge governments to be particularly careful during a lockdown and take precautions to avoid these situations. United Nations Regional Information Centre for Western Europe posted an article where they summarized a position of WHO about the increase of domestic violence towards women. They claim that the emergency calls by women increased and that women were often left trapped with violent partners (WHO warns..., 2020). Human Rights Watch warns countries to take precautions while initiating policies that may endanger women. In the article posted on the website of Human Rights Watch, they write that "In many countries, women from already marginalized communities find themselves on the front line as essential workers, with a more precarious financial situation as informal workers, or facing unaddressed institutional racism and health disparities. All of this makes accessing services for gender-based violence more difficult" (Women Face..., 2020). Women are one of the most vulnerable groups because they are still many prejudices and stereotypes present towards their status in society. Human Right Watch correctly points out in their article that many women from minorities or marginalized communities have a much harder time finding support and help during the pandemic.

As we have argued above, the marginalized groups and minorities were often discriminated during the first months of the COVID-19 pandemic. Some states even introduced controversial regulations that intervened with the possibility of having an abortion (many women consider an abortion a crucial right). For instance, in the article by EURACTIV, they claim: "Many hospitals in Slovakia have stopped performing abortions following a government decision to postpone all planned surgeries except life-saving ones due to the risk of infections during the coronavirus pandemic. This has resulted in Slovakia effectively limiting access to safe and timely abortions, several human rights organisations have warned, prompting ombudswoman Mária Patakyová to request the country's new health minister, Marek Krajčí (OĽaNO), to guarantee women have access to safe abortions during the pandemic" (Gabrizova, 2020). We are not arguing that states directly wanted to hinder access to certain rights³, but rather that harsh and fast decisions resulted in many unforeseen consequences.

³ Other institutions also pointed out this problem within Slovakia and called for a better approach towards the rights of women. For instance, the website of the Council of Europe also mentions these issue but also focuses on other countries that had a problem ensuring women's sexual and reproductive rights (COVID-19: Ensure women's access to sexual and reproductive health and rights, 2020).

Impacts of COVID-19 on people with disabilities and their daily life

Minorities and women are not the only groups that have been left vulnerable during the COVID-19 pandemic. Many argue that people with disabilities faced many new obstacles and were left vulnerable because many services were unavailable to a certain degree because of various governmental restrictions. People with disabilities often need special care and medical procedures to protect their health and wellbeing. However, during COVID-19, many services were limited, cancelled or otherwise unavailable.

We will now return to the European Union Agency for Fundamental Rights and their "Coronavirus pandemic in the EU – Fundamental Rights Implications – Bulletin 4" where they have a section on the people with disabilities and their vulnerability during COVID-19. In the passage about people with disabilities, it is written: "Persons with disabilities continued to face challenges in their everyday life as a result of the pandemic. In certain cases, practices could arguably even amount to discrimination. In Austria, the Aid Association of the Blind and Visually Impaired reported that contact-tracing applications did not take into account the needs of persons with disabilities" (Coronavirus pandemic..., 2020, p. 29). Other countries also had problems with upholding the rights of people with disabilities. For instance, in the article "Coronavirus: Why disabled people are calling for a Covid-19 inquiry" the author mentions several cases of discrimination against people with disabilities during COVID-19 pandemic. For instance, the author argues that many people with disabilities in the UK feel insecure because they are more vulnerable to COVID-19. They also have less support from the government because of the restrictions, so they often have to rely on themselves to fulfil basic needs (Webster, 2020). We can argue that the governments were not prepared for these scenarios because nobody expected a global pandemic that would limit and hinder daily activities of citizens. For people with disabilities, limiting access to certain services is a severe intrusion to the daily functionalities. This limitation means that person with disabilities has to rely on himself to provide basic care and do all the daily routines without most support.

American Psychological Association (APA) posted an article that describes the psychological impacts of COVID-19 on people with disabilities. They write: "Emerging research on COVID-19 shows that the coronavirus pandemic has increased psychological distress both in the general population and among high-risk groups." (How COVID-19..., 2020). They support their claims by appealing to older researches about physical distancing, mass trauma and past pandemics. They claim that people with disabilities face social isolation, suffer from loneliness or have limited access to medical supplies and socioeconomic resources (How COVID-19..., 2020). To uphold and protect the rights of people with disabilities, governments have to think about the impacts of decisions on the mental health of vulnerable groups. Many of the current data, articles and documents from various international

organizations suggest that not all the decisions have taken into account the impacts on the mental health of the vulnerable citizens⁴.

Protecting and securing human rights during the pandemic

In this section, we are going to establish the ethical recommendations for the COVID-19 restrictions and decision making process. Firstly, we will argue that any decision impacting human rights has to consider the impact on human dignity. Slovak philosophers Zuzana Palovičová and Tatiana Sedová argue that human dignity is a crucial element in understanding the concept of human rights. They claim that we have to respect the idea of freedom; the freedom to be different and to choose what we want ourselves. This kind of thinking represents the modern understanding of freedom (Palovičová, and Sedová, 2018, p. 38-39). We argue that human rights should always respect the dignity of human beings. The definition of human dignity is often controversial, but we want to use dignity as an aspect that needs to be considered while developing any restrictions on human rights (Kuzior, 2014, p. 68; Kuzior, 2019). Philosopher Christoph Menke presents several significant remarks about the concept of dignity and its implications for human rights. Menke analyzes different approaches to dignity and writes that human dignity is a necessary condition for human rights. He also claims that governments have to respect and accept people to acknowledge their rights (Menke, 2017, p. 172). He summarizes his position and claims that the traditional understanding of human dignity is not sufficient for human rights because the concept of human rights emerged later than the idea of human dignity. Therefore, we have to think about how we want to understand the concept of human dignity to not fall under the old theories (Menke, 2017, p. 176). We are arguing that dignity and living in dignity is crucial for any modern society. Governments are here for the people and have to create measures and rules that consider the dignity of human beings. They have to reflect older understandings of dignity and introduce measures according to new conditions and circumstances.

Palovičová, in her other work, mentions diversity and highlights its importance because certain groups of people are often left vulnerable under the standard circumstances in society. She values approach that upholds individual needs and promotes diversity (Palovičová, 2017, pp. 34-35). When we apply this argumentation to current conditions with COVID-19 pandemic, it means that the rules, regulations and restriction that any state creates has to take into account the most vulnerable groups that may need different and specific modifications to standard

⁴ Before we continue, we want to mention elderly because they are one of the most vulnerable groups during the COVID-19 pandemic. The elderly are extremely vulnerable to all the impacts that we mentioned in our article. All the documents and reports also focus on the elderly as one of the most vulnerable groups. Unfortunately, our article does not focus on this specific group but used other groups that are often neglected.

procedures. For instance, a person with a disability cannot be subjected to standard societal restrictions that would result in the endangering essential daily activities or prevent them from participating in society. We also need to mention consequences on social and economic rights, as many ethical problems arise from lack of support. First, we need to establish some theoretical understanding of social protection to address some of the mentioned failures in governmental restrictions. For instance, author Judith Wyttenbach argues that social protection is an essential and complex duty for the state. Governments should establish a system that grants people decent living conditions so they can live in dignity (Wyttenbach, 2017, p. 332). Similarly, the report from the United Nations "COVID-19 and Human Rights: We are all in this together" from April 2020 recommends that states protect the social and economic rights through various measures of social protection. For instance, they focus on unemployment, reduction of protection or care services and the closing of schools (COVID-19 and Human Rights..., 2020, p. 8). Any measures by the government must uphold and protect the rights of the people, even though they aim to preserve and protect citizens from the pandemic. Otherwise, states face enormous consequences and are criticized for violating various human rights or making harsh decisions. For instance, while developing any restrictions on medical procedures, governments need to take into consideration how these restrictions will impact vulnerable groups in society. In this section, we argue that governments need to uphold rights and protect all aspects of citizen's lives because life is a complex condition and cannot be reduced just to health protection. We need to protect the health, social and economic rights of the citizens while upholding the notions of dignity, freedom, diversity and vulnerability (Kuzior, 2020).

Conclusion

The COVID-19 pandemic had many unforeseen impacts and consequences. We have described some of the most significant ones and how they impact various vulnerable groups in society. For instance, we have analyzed Roma communities and how they were impacted during the first stages of COVID-19 restrictions. We also focused on women because there was an increase in domestic violence during lockdowns. People with disabilities faced many obstacles because of restrictions and regulations preventing their daily activities. Many vulnerable groups also felt lonely and abandoned because of lockdowns that isolated people from any form of social interaction. We have to keep in mind that governments are responsible for creating inclusive regulations that will uphold and protect individual needs of vulnerable groups. There are several key factors that governments need to consider while developing any kind of policy for tackling COVID-19 pandemic. First, they need to respect the concept of human dignity and the diversity of human beings. The diversity is a crucial factor because it acknowledges the need for specific conditions of certain vulnerable groups.

For instance, we need to consider how restrictions of support services (assistance, medical therapies, mental health protection) will impact people with disabilities and their daily lives. We also argued for the protection of social and economic rights because the longterm effects of COVID-19 are impacting living conditions of citizens. People are more liable to lose work or suffer from a lack of various social services. We have focused primarily on these three groups, Roma communities, women and people with disabilities. Each of these groups suffered consequences from governmental restrictions throughout the world. Ethical dilemmas during COVID-19 are continuing and we have to prepare for new challenges, and have to rethink our current ethical approach that often resulted in discrimination, human rights issues and forgetting the vulnerable groups.

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PRIVATE LABELS – CUSTOMER PROFILE AND CHANGES IN TRADE DURING PANDEMIC

Marie SLABÁ

College of Polytechnics Jihlava, Czech Republic; marie.slaba@vspj.cz, ORCID: 0000-0001-9607-1521

Purpose: This article focuses on private labels, which play a crucial role in the retail market. This article aims to examine the market of private labels in the Czech Republic and reveal the customer profile of private labels in the Czech market.

Design/methodology/approach: This article incorporates the results of the author's research devoted to various aspects of private labels and trade. The author used an online questionnaire for the research. This questionnaire was divided into several parts and prepared based on the literature search of statistics, reports, papers, and scientific studies.

Findings: Large retail chains can achieve more than 30% of sales from private labels. The nature of the private label market is changing significantly. Therefore, the customer profile is changing too. The author's research revealed that the most critical segment for private labels is women, specifically single women with an income of up to 20,000 CZK, aged under 27-36, who live in medium-sized cities with up to 100,000 inhabitants.

Research limitations/implications: In the current Covid-19 pandemic, the results can contribute to more effective collaboration with customers. In the future, it is intended to develop research on other aspects that affect the operation of private labels.

Practical implications: It is clear from the research results that large retail chains should focus on certain specific segments, especially women with the above profile. According to research, this segment is the most crucial segment for retail chains and should focus on it.

Originality/value: The article focuses on the changes during the Covid-19 pandemic. At this time, there were changes in shopping behavior, which are listed in the article.

Keywords: private labels, customer profile, retail, customer.

Category of the paper: research paper.

1. Introduction

In the progressively growing competition in the retail markets, customer care and handling have become priorities for all organizations operating in this market. Knowledge of the customer's profile is essential not only for large retail chains but for smaller retailers, too. However, large retail chains are more concerned with this issue. To improve and strengthen

their market position, retail chains are trying to invest considerable money in obtaining information about their customers.

Julashokri et al. (2011) reported that customer profile knowledge is an essential element of one-to-one marketing in marketing planning. Various models are often used in marketing planning to create suitable customer profiles, which Park and Chang (2009) argue can improve entire customer profiling systems. Lee and Yang (2003) emphasize that a well-known customer profile makes it possible to predict his/her future preferences. An understanding customer profile is one of the most important secrets of selling, not only in retail (Upadhyay, Vidhani, and Dadhich, 2016).

Since a detailed knowledge of the customer profile is necessary for every organization to survive, this article is devoted to this issue. The customer profile differs not only in different fields but also concerning the products or brands. The author pays attention to the retail market in this article, where private labels have a specific position. As Grosso and Castaldo (2015) stated, changes in retail have also brought about the growing importance of private labels in the competition of retail chains. The importance of private labels in the retail market is constantly growing; therefore, the author will focus on the customer buying retailers' private labels.

Retail represents an essential part of any economy in the world. Retailers represent any company that sells products or services to private customers (individuals and families) or businesses for direct consumption. Business activities can be carried in physical stores as well as alternatively online. The Covid-19 pandemic changed all markets, mainly due to government measures that often banned various goods in physical stores. For this reason, online retailing is becoming increasingly important. The following figure shows the development of retail trade volume during Covid-19 in the EU.

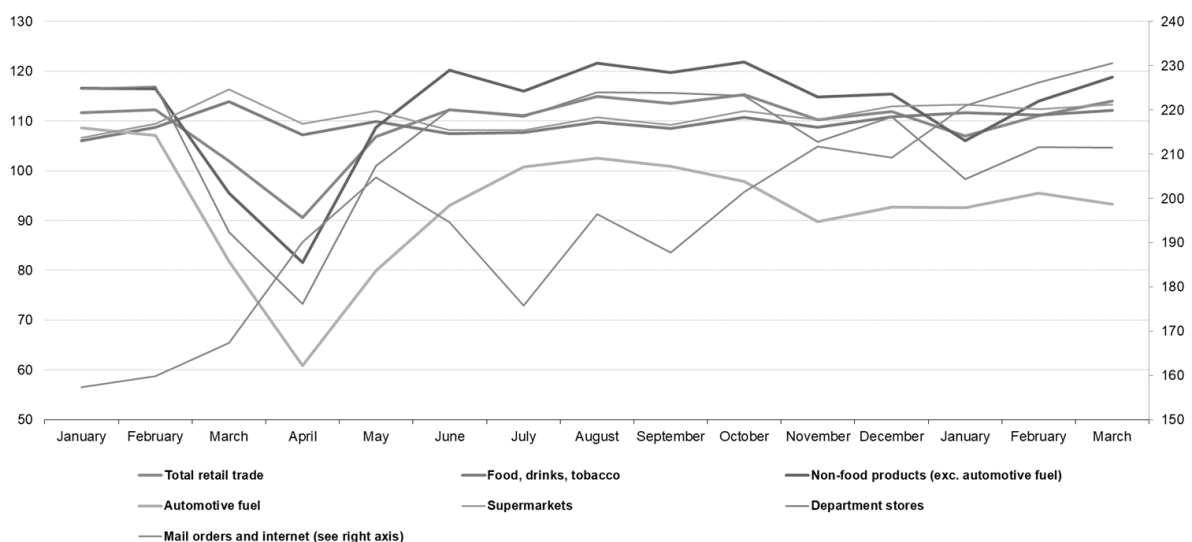


Figure 1. Development of retail trade volume in EU adapted from Eurostat (2021a).

The most significant drop in sales was recorded by automotive fuel, non-food products, and department stores. The following table shows the month-on-month rate of change in trade volume according to selected product groups and total retail during March 2020 and December 2020.

Table 1.

Development of retail trade volume in EU (March 2020 – December 2020)

| | March | April | May | June | July | August |
|---|-----------|---------|----------|----------|-----------|---------|
| total retail | -9.1 | -11.2 | 18 | 5.1 | -1.1 | 3.5 |
| non-food products (excluding automotive fuel) | -18 | -14.6 | 33.3 | 10.5 | -3.5 | 4.8 |
| automotive fuel | -23.6 | -25.7 | 31.4 | 16.5 | 8.3 | 1.7 |
| department stores | -25 | -16.4 | 37.8 | 11.2 | -1.3 | 4.5 |
| | September | October | November | December | September | October |
| total retail | -1.2 | 1.5 | -4.3 | 1.5 | -1.2 | 1.5 |
| non-food products (excluding automotive fuel) | -1.5 | 1.8 | -5.8 | 0.5 | -1.5 | 1.8 |
| automotive fuel | -1.6 | -3.1 | -8.2 | 3.2 | -1.6 | -3.1 |
| department stores | -0.2 | -0.4 | -8.1 | 4.7 | -0.2 | -0.4 |

Source: own compilation based on Eurostat (2021b).

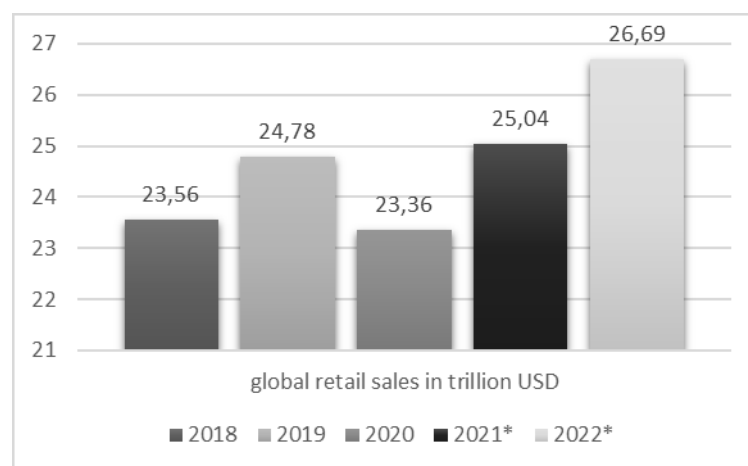


Figure 2. Global retail sales 2018-2022. Source: adapted from Statista (2021a).

If we focus on global overall retail sales, the impact of the COVID-19 pandemic is not so significant, and an increase is expected this year. Unfortunately, some sectors, see Table 1, was hit very hard and suffered significant losses. These losses are also why companies are increasingly focusing on customer profile issues to keep loyal customers.

The following figure shows the situation in the Czech Republic.

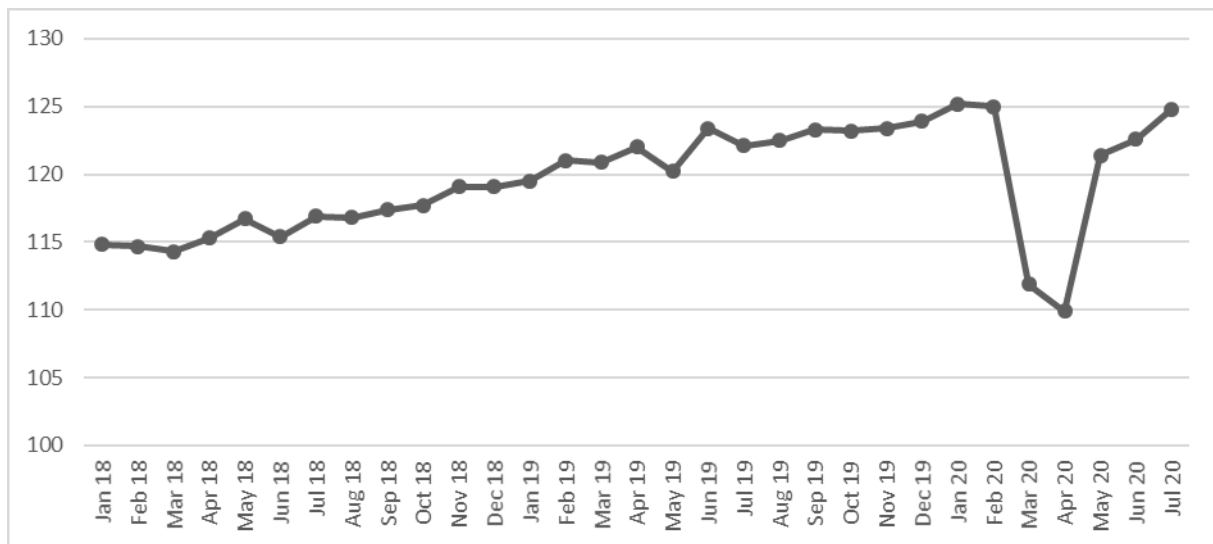


Figure 3. Monthly sales volume of total retail trade in the Czech Republic from January 2018 to July 2020 (as index*). Source: adapted from Statista (2021a).

As is clear from the previous chart, the situation in the Czech Republic also recorded a significant decline in total sales in March and April 2020, to values below the 110 index compared to the base year.

As mentioned in the Introduction, retail companies invest considerable resources to obtain detailed information about their customers. The aim is to obtain as much information as possible about customer profiles, which would lead to improved customer care, personalized offers, and thus ensuring the loyalty of existing customers and acquiring potential new customers.

Retail chains use various tools to obtain customer information, such as data mining techniques, customer databases, database marketing, loyalty programs, marketing surveys, or various modern technologies, applications, and expert methods. All these tools are then used to profile the end customer. Upadhyay, Vidhani, and Dadhich (2016, p. 65) define customer profiling as "a method to create a portrait of customers, including their personal and transactional details". Upadhyay, Vidhani, and Dadhich (2016) state that customer profiling is a necessary tool in customer-centered decisions. Customer profile data usually includes age, name, gender, salary, place of residence, and other geographic information Syakur et al. (2018).

The customer profile varies in different areas, as does his shopping behavior, closely related to the customer profile. This fact is also the reason why many authors deal with the customer profile in some specific regions. Many studies cover diverse areas like telecommunication, B2B market, insurance, energy, banking, retail, utility. Lee, Yo, and Chung (2011) focus on the customer profile in e-commerce. Planiappan et al. (2017) deal with customer profiling in the field of bank telemarketing. Wu et al. (2007) apply the customer profile integration based on ontology in telecommunications. Determining the right customer profile is a difficult task, which Vasilev (2014) claims in his research on the customer profile in the credit institution sphere. Some authors focus directly on the issue of customer profiles in the field of retail. We can include among these authors Chao, P. et al. (2008) and Prasad and Malik (2011).

The fact that knowledge of the customer's profile is a crucial element shows that many authors and those mentioned above deal with this issue. Among others, we can mention, for example, Cordo (2012), Wehmeyer (2005), Risch and Schubert (2005), or Hassan and Tabasum (2018).

As indicated above, private labels play an important role in retail, as large retail chains can achieve more than 30% of sales from private labels The Nielsen Company (2018). The following figure summarises the latest statistics of supermarkets' private label sales in Europa by individual country.

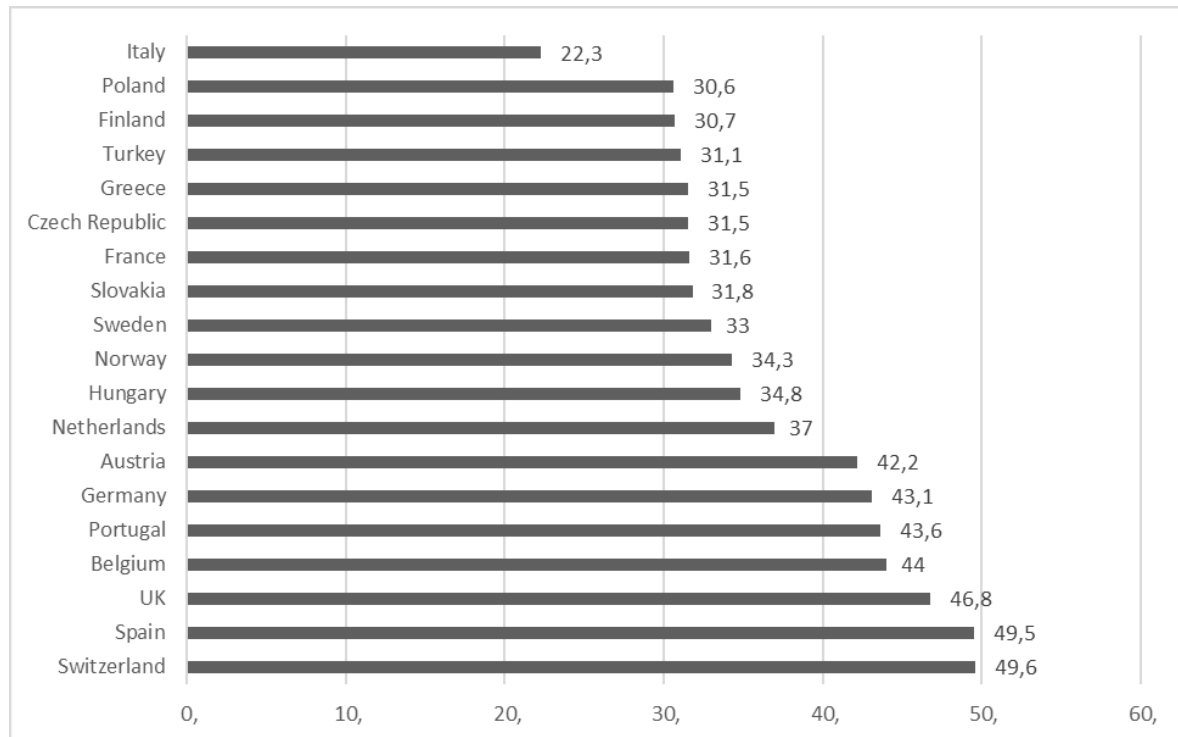


Figure 4. Supermarkets' sales volume of private labels in Europe 2020 in %, Source: adapted from Statista (2021b).

As shown in the figure above, the penetration of private labels in the EU varies from country to country. The highest penetration is in Switzerland 49.6%, Spain 49.5%, United Kingdom 46.8%. The penetration was higher than 40% reported in Austria, Germany, Portugal, and Belgium. The penetration of private labels in the Czech Republic has been growing and overturned 30% last year.

Furthermore, how can we define private labels? Based on the Cambridge English Dictionary, private labels are labels of goods produced by some manufacturer and sold using the name of the store. We can state that private labels are brands of retailers sold using the name of the retailer. Private labels aim to increase the number of loyal customers. Since the importance of private labels is growing, the number of researches, studies, and papers is increasing – for example, Cuneo et al. (2015), Kadirov (2020), Upadhyay, Vidhani and Dadhich (2016), Janssen and Hamm (2014).

2. Methods

The author focuses on the private label, customer attitude towards private labels, categories of private labels, etc. This paper aims to present the author's research concerning the customer's profile buying private labels. Upadhyay, Vidhani, and Dadhich (2016) and other researchers stated that the customer profile is created based on customer research. Therefore, the author used marketing research to obtain data about the customers who are buying private labels. The author used an online questionnaire for the research. This questionnaire was divided into several parts and prepared based on the literature search of statistics, reports, papers, and scientific studies.

The first part of the questionnaire contained basic questions about private labels to reveal the customer's profile buying private labels. The second part of the questionnaire included the following characteristics of customer:

- age,
- profession,
- education,
- gender,
- number of family members,
- monthly income,
- place of residence by the number of inhabitants.

A total of 340 (42% of males and 58 % of females) questionnaires were obtained and included in the analysis. The following tables characterize the distribution of respondents based on the selected characteristics.

Table 2.

Distribution of respondents according to the profession and education in %

| | | | | | |
|------------|-----------------|-----|-----------|-----------------------|-----|
| Profession | Student | 20% | Education | Primary school | 8% |
| | Employee | 40% | | High School | 28% |
| | Entrepreneur | 22% | | University – bachelor | 34% |
| | Pension | 10% | | University – master | 24% |
| | Maternity leave | 8% | | University – Ph.D. | 6% |

Source: author's research.

From the point of view of the profession, employees were the most represented group in the research. Entrepreneurs and students are represented by similar numbers, 20 and 22%. The most numerous group were employees with a bachelor's degree.

Table 3.

Distribution of respondents according to the number of household members and the average monthly income in %

| | | | | | |
|-----|--------------|-----|---|----------------|-------------------|
| Age | less than 18 | 5% | Place of residence by number of inhabitants | less than 500 | 8% |
| | 18-26 | 15% | | 501-5000 | 12% |
| | 27-36 | 23% | | 5001-10000 | 15% |
| | 37-46 | 26% | | 10001-50000 | 22% |
| | 47-56 | 16% | | 50001-100000 | 12% |
| | 57-66 | 10% | | 100001-500000 | 8% |
| | more than 66 | 5% | | 500001-1000000 | 8% |
| | | | | | more than 1000000 |

Source: author's research.

Almost half of the respondents belong to the age group 27-46 years. In the case of residence size, not all categories distinguished by the Czech Statistical Office were listed, but some were merged with regard to a large scope.

3. Results and discussion

In this part, the individual questions will be discussed in detail about the selected individual characteristics. First, respondents were asked whether they buy private labels and what goods they prefer, whether private or branded goods.

In the first part of this chapter, we will focus on the influence of age, gender, income, and possible combinations on private labels' purchases.

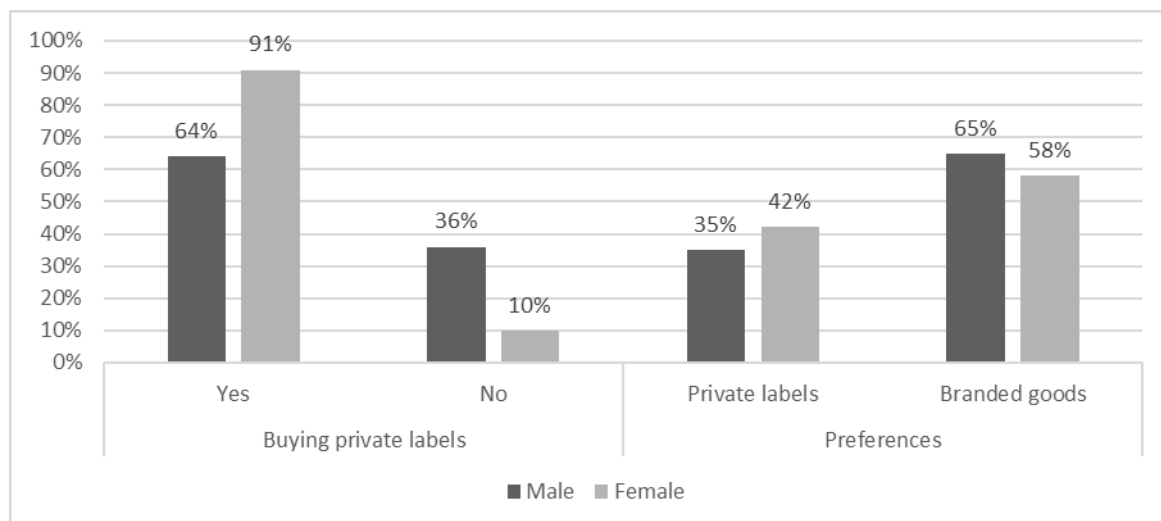


Figure 5. Private labels and their preferences by male and female in %, Source: author's research.

As shown in Figure 5, most women buy private labels, 27% more than men, but in the case of preferences, both men and women prefer branded goods. Of men who buy private labels, 63% said they prefer branded goods. The following graphs show preferences and the purchase of private labels depending on the average monthly income.

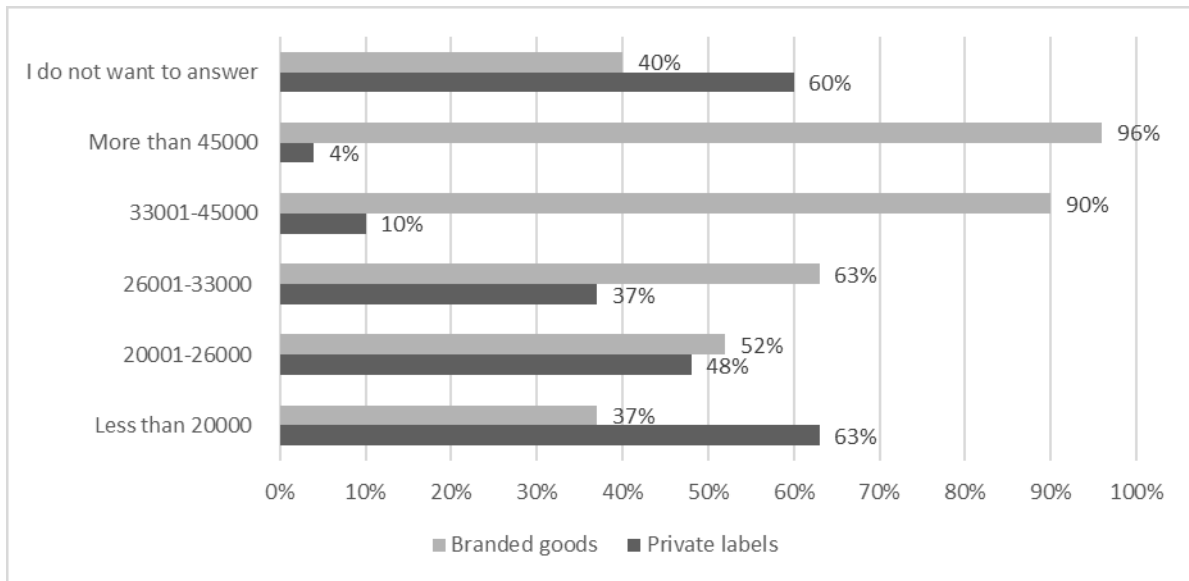


Figure 6. Preferences of private labels depending on the average monthly income (in CZK) in %, Source: author’s research.

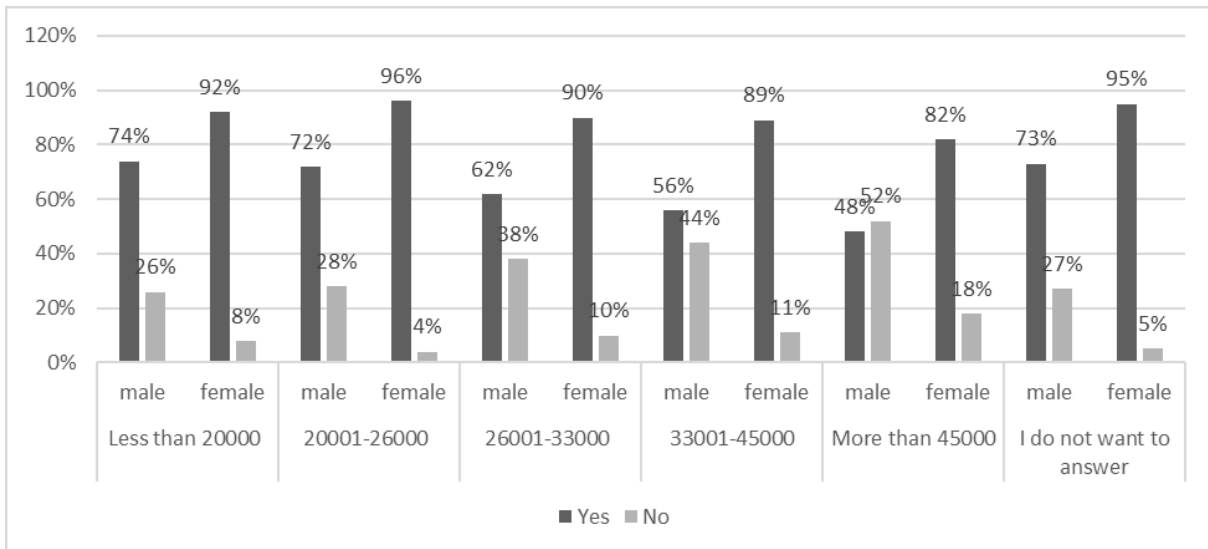


Figure 7. Purchase of private labels by male and female depending on the average monthly income (in CZK) in %, Source: author’s research.

As many authors point out, a distinction needs to be made between buying private labels and their preferences. It is very clear from the previous two graphs that higher income groups mostly prefer branded goods. Nevertheless, even so, these income groups buying private labels, too.

For example, the respondents from the highest income group with an average monthly income of more than 45000 CZK stated in 96 % that they prefer branded goods. Nevertheless, 82% of females and 48% of males stated that they are buying private labels. As mentioned above, private labels are bought by more women in all categories of average net income.

The following graph shows the redistribution of private labels according to individual age groups for males and females.

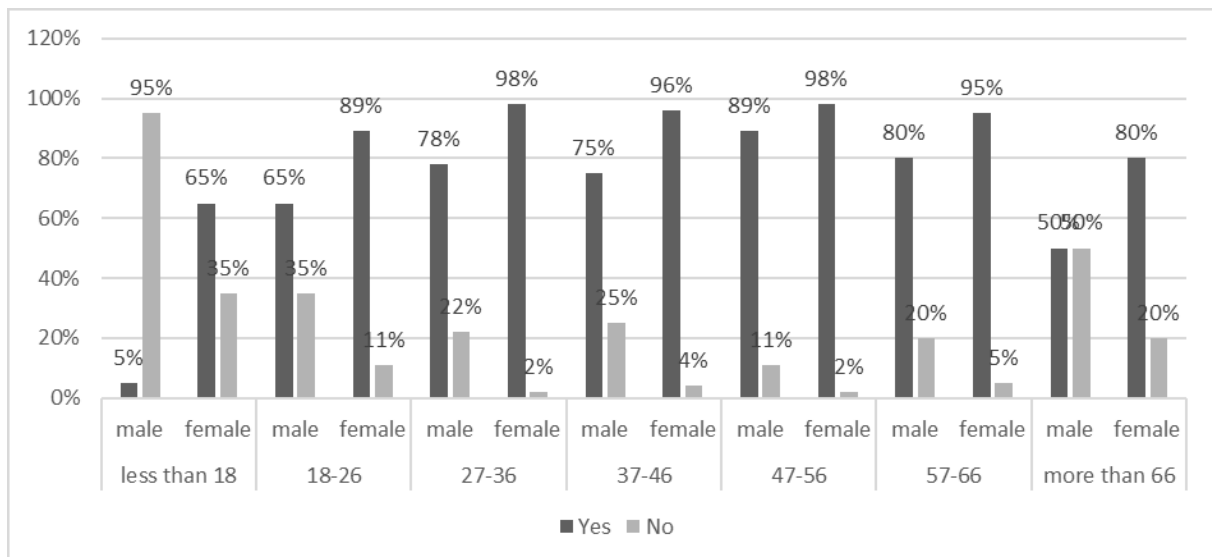


Figure 8. Purchase of private labels and different age groups in %, Source: author's research.

In the case of age groups, there is much less interest in buying private labels from the youngest, especially men under 18. However, it is necessary to realize that younger age groups up to 26 years are among those who prefer branded goods.

In the next part, we will deal with the influence of the customer's employment, the highest level of education attained, the number of household members, and the size of the place of residence on the purchase of private labels.

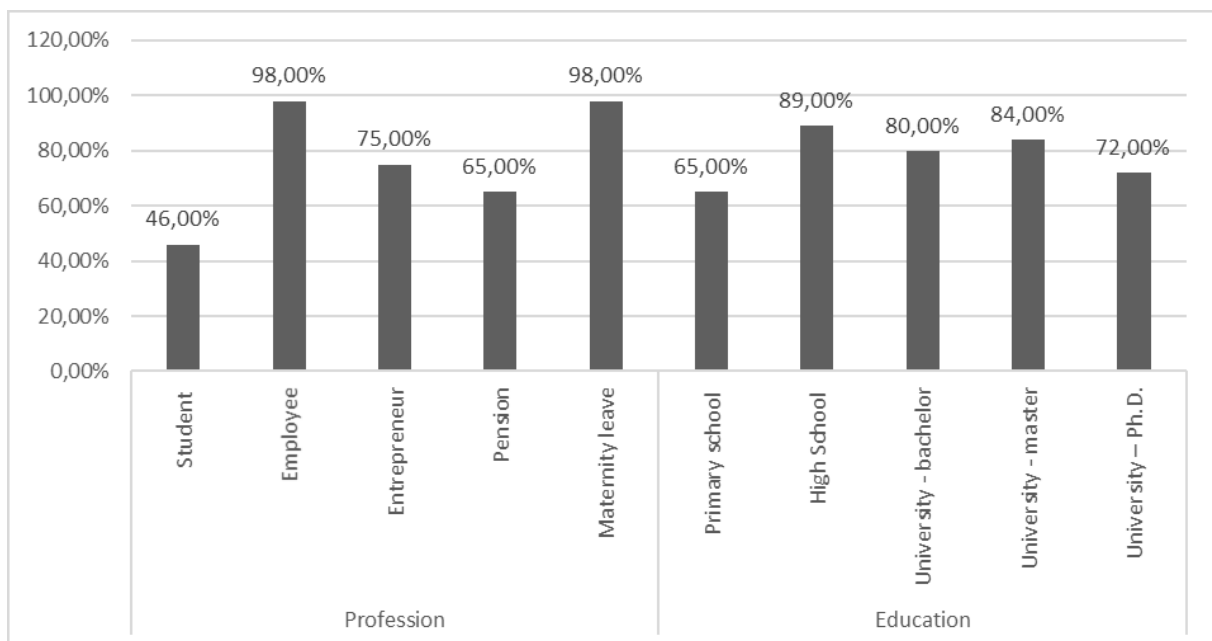


Figure 9. Profession and education in %, Source: author's research.

Private labels are the least bought by students, pensioners, and people with primary education—however, most mothers are on maternity leave and employees. In terms of education, the distribution among other groups is relatively even.

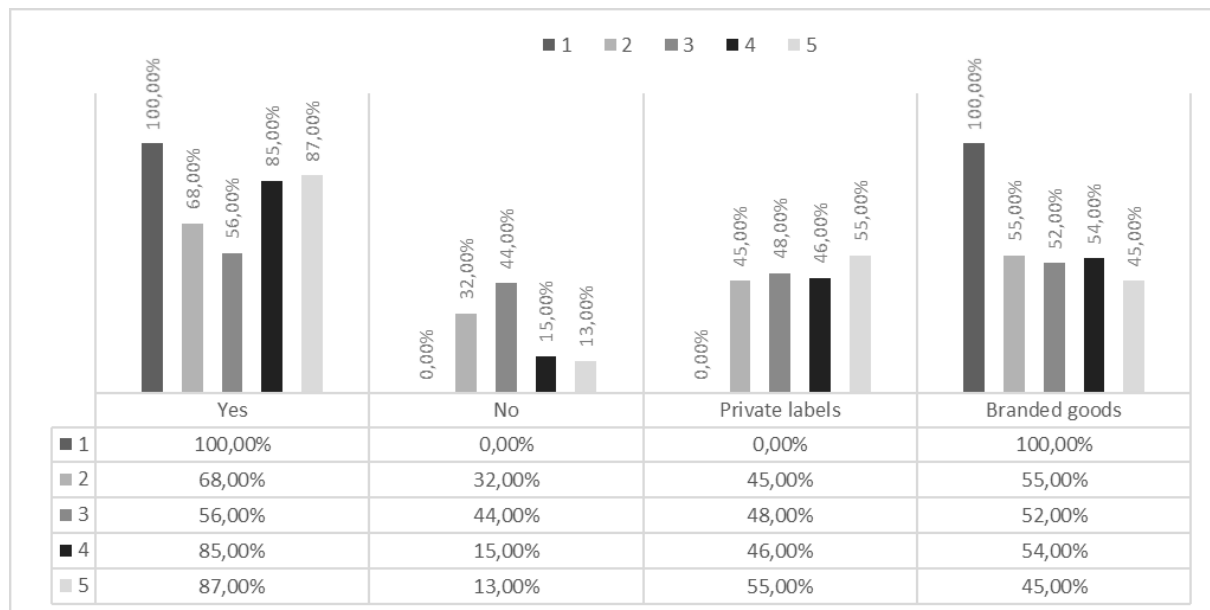


Figure 10. Private labels and number of household members in %, Source: author's research.

Figure 10 focuses on individual types of households with different numbers of members. This figure shows whether they buy private labels and whether they prefer branded or non-branded goods. The least represented group was a household with one member (a total of 6% of respondents), whom all agreed that they buy private labels but prefer branded goods. Households with three members purchase private labels the least. However, they prefer branded and non-branded goods to about the same extent.

A closer examination of the purchase of private labels concerning the size of the residence revealed that people buy private labels more from medium and large cities. The least private labels are bought by people living in small towns and villages with a population of less than 1,000. In this group, only 32% of respondents answered that private labels are bought.

4. Summary

Since private labels such as Cuneo et al. (2015), Kadirov (2020), Upadhyay, Vidhani, and Dadhich (2016), Janssen and Hamm (2014) point out, play a significant role in the current competition for customer retention, which has intensified during the Covid-19 pandemic, both customers and private labels need appropriate attention.

Not only for private labels, it is necessary to focus on the customer's profile and thorough knowledge, but it is also necessary to pay attention to the purchasing behaviour of customers, which is greatly influenced by the customer's profile, customer preferences, and approach to different brands.

This article aimed to examine the profile of a customer who buys and prefers private labels. Based on the author's research, it is possible to define several profiles of private label customers.

The first segment is single women with an income of up to 20,000 CZK, aged under 27-36, who live in medium-sized cities with up to 100,000 inhabitants. Women with this private label profile not only shop but also prefer.

The second important segment of private labels are families with 1 to 2 children, with an average monthly income of 26,000 to 45,000, primarily employees with a university degree at the bachelor's or master's level aged 27-46. Even in this segment, women also buy more private labels than men. However, this segment often prefers branded goods more than private labels.

The limitation of this research is the sample, which should be further expanded in the future and ensure an equal percentage of individual groups to apply statistical methods that would confirm the resulting customer profile of private labels. Further research will also focus on the differences in the profiles of customers buying different categories of private labels.

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FACTORS OF CHOICE OF PRIVATE MEDICAL SERVICES IN POLAND

Julianna STASICKA^{1*}, Igor SZYMAŃSKI²

¹ Poznan University of Economics and Business, Poland; julianna.stasicka@phd.ue.poznan.pl,
ORCID: 0000-0003-1656-5877

² Poznan University of Medical Sciences, Poland; 78905@student.ump.edu.pl, ORCID: 0000-0002-4598-5224

* Correspondence author

Purpose: The main purpose of this article was to explore main factors of choice of private medical services by Polish patients.

Design/methodology/approach: In the theoretical part of the article, the current situation in health care sector in Poland was discussed. Also, based on the literature authors introduced their own classification of factors of choice of private medical services. The empirical research was conducted in August 2021. Finally, 122 participants were included in a research sample.

Findings: The biggest number of respondents indicated the availability of appointments as the most fundamental aspect. Also, the study revealed other factors, especially choosing a particular physician, previous positive experiences, the transparency of treatment and the quality of care as important for patient's choice.

Research limitations/implications: Research was limited to the private sector which results from the fact that its share on the market grows and is increasingly popular among foreigners. It is worth considering to further deepen the research including studying factors in public health care sector to compare them or to expand the research group to a larger population. Due to technical development forced by recent epidemiological situation of SARS-CoV-2019 pandemic, also it is worth to include telemedicine into future studies.

Practical implications: Private sector operates on the laws of economy which allow the implication of research findings to gain competitive advantage in areas which are most important for patients treated as customers. Outcomes of this article have practical implications for private medical entities. They could enhance operation areas which were chosen by patients.

Social implications: Polish health care sector is one of the national economy segments. Providing access to medical services for citizens is one of important government's activities. In case of insufficient access, private sector may be able to support public health care system.

Originality/value: It is crucial to conduct such a research among Polish patients because these factors may differ due to a particular country and its specific determinants like political solutions, culture, functioning of health care system, types of medical insurance and other specific conditions. Moreover, in the theoretical part of the article, authors built their own classification of factors of choice of private medical services.

Keywords: private health care, patient's choice.

1. Introduction

Health status correlates with people participation in labor market and work productivity due to influence on human performance. Moreover, the state of health of society is connected with economic development of the country, stimulating economic growth (Korporowicz, 2012). Therefore, public spending on health care is an important investment of the state. The system of financing health care should enable citizens to use all necessary health services. In addition, a sufficient level of funding is necessary to protect citizens from personal costs of health services occurring in case of illness and vocational absence (Zgliczynski, 2018). The structure and level of health care financing is one of the main problems in Polish health care sector. Share of GDP is one of the lowest among developed countries (Bukowski and Pogorzelszyk, 2019). According to data provided by the Organization for Economic Co-operation and Development (OECD), Poland allocates concomitantly 7,2% of GDP on health sector, including both, public and private. Exactly 5,2% of GDP on public and 2,0% of GDP on private sector respectively (OECD, 2021). Despite the improvement of the indicator over the years, still, in Poland the share of GDP on health care sector is one of the lowest among OECD countries. Because of that, there are many problems in Polish health care system functioning and a successful delivery of services. One of the main problems of Polish health care sector are modest human, material and financial resources. Insufficient public funding generates problems with ensuring availability of guaranteed healthcare entitlements, therefore private sector popularizes. The private sector ensures effective access to medical services without queues which is a crucial drawback of the public sector (Bukowski and Pogorzelszyk, 2019).

Health systems in all countries face many different challenges such as increasing demand for quality of care and safety, ensuring universal access to health services and the rising costs of health services. For managers of health care entities, analytical observation and understanding of these phenomena is crucial to survive in turbulent environment (Jędrzejczyk, Wojtecka and Zarzeczna-Baran, 2017). Referring to an increasing demand for medical services and low spending on the public sector, the development of private health care sector succeeds in establishing new multidisciplinary hospitals and clinics. In 2017, the value of private health care sector in Poland was estimated at EUR 8 billion (Rutkowski, 2019). Moreover, the combination of great quality of medical services and relatively low costs make Poland attractive to foreign patients. Their savings can reach up to 80% in comparison to costs in Western Europe. More and more Polish medical entities are looking for the opportunity to gain share of the international market (Ministry of Foreign Affairs, 2019).

Private health care entities need to recognize which criteria mainly influence patients' choice in order to encourage them to use their services and retain them in long-term relationships. Various factors of patient's choice for the private services differ depending on country due to distinct healthcare systems and types of insurance. Also, particular national characteristics such

as culture or administrative settings are important and make comparisons between countries difficult (Malik and Sharma, 2017). As a result, there is an imperative need to study this matter in Poland. As it is known, the supply of health care services does not cover in a linear relationship with its demand, therefore there is the necessity of increasing the effectiveness of health care system. Identifying the factors of private services choice allows establishing of competitive advantage of private sector which operates based on economy laws and leads to profit achievement (Can and Isin, 2018). Value of private sector is predicted to grow at faster pace. It especially concerns rehabilitative and curative care. Moreover, steep growth is expected to continue due to private sector development for middle and upper-class. Also, it is enforced by strong dissatisfaction with public treatment (Bukowski and Pogorzelszyk, 2019).

In Poland, medical entities face with rapidly changing conditions of operation due to environment pressure. The increase in awareness and expectations of customers with the simultaneous increase in competition and constant pursuit to increase economic efficiency and the simultaneous economic effects are one of the challenges. The requirements and expectations are constantly growing, and organizations have to improve the quality of the services they offer to adapt changes and survive (Gołębiowski, Wojnarowska and Jędrzejczyk, 2017).

2. Theoretical background

Service sector has a great contribution to national GDP. The development of the health care sector constitutes the same importance as the development of any other sector in economy, even if it is not linked to public funds transfer only. Fiscal burdens offset benefits. In Poland, the source of medical services funding can be distinguished into a public and private area (Pietryka, 2018). Efficient operation of the healthcare sector largely depends on the way it is financed, and thus the choice of an appropriate model of the health care system. The proper fit of a specific healthcare model is determined by individual factors of economic development and the adopted health policy (Wielicka, 2014). The role of the main public payer in Poland is fulfilled by the National Health Fund (NFZ). Especially, the scope of its activities is financing of health care services from public funds to eligible people (Bromber, 2017). Compulsory health insurance based on the Constitution of Poland guarantees equal access to health services for every Polish citizen. However, individual payments accounted for a sustainable part of household expenses (around 22,6% as of 2016). More than 65% of expenses were distributed for medical goods like medications (Bukowski and Pogorzelszyk, 2019).

Private funding can be divided into two models. The first one is a direct form of payments which means the usage of commercial services. The second form is cost-sharing of benefits in which a patient has health insurance and participates in costs of provided services (Pietryka, 2018).

According to Guy (2019), patients decide to pay for private medical services in order to receive the treatment not available in public insurance in the way they need or expect. Although patients using private health care services are sometimes directed to public entities in occurrence of clinical situations, e.g. emergency situations, they predominantly do not select the place of private treatment randomly. Nowadays patients are conscious to choose proper place fulfilling their needs. Earlier their decisions mostly depended on their family, friends or referring doctor due to lack of own knowledge. With reference to rising awareness, higher literacy rate, higher income and broader access to media patient demand great quality of services and even a special personal approach. These days, patients carefully select services before they decide to make an appointment (Malik and Sharma, 2017). Based on literature study of Garedeu, Woldie and Walle (2019), Can and Isin (2018) and also Malik and Shrama (2017), authors of this article decided to order factors of private medical services choice in categories concerning main dimensions. Results are shown in the Table 1.

Table 1.

Categories of factors of choice of private medical services – literature study

| Factors of choice of private medical services | |
|--|--|
| Factor | Specification |
| Recommendation | Family/friend/other patient/media or internet recommendation of private facility, physician recommendation of certain facility |
| Good own experience | Prior own experience with private facility |
| Interpersonal factors | Politeness of staff, individual approach |
| | Choice of specific practitioner working in the facility, personal relation |
| | Informal acquaintances with any personnel member |
| Transparency of treatment | Explanation of procedures, transparent and available information, involvement in decision making |
| Facility's brand image | Reputation of the facility and its management, fame of doctors, insurance provider, opinion about the staff |
| Accessibility to treatment | Scheduling of appointments, waiting time, continuous care, lack of delays, hospitalization length |
| Quality of care and staff competence | Time per patient, safety measures, privacy of examination, avoidance of unnecessary suffering/stress/inconveniences, personnel qualifications and experience, training, surgical work volume |
| Location and transport | Proximity to residence, ease of transportation, parking availability, nearby off-facility services |
| Resources and technical facility | Latest technology and techniques, accessibility to procedures and diagnostics, multi-specialty services, sufficient number of personnel |
| Sanitary conditions | Building and infrastructure condition, cleanliness and hygiene, non-intrusive surrounding environment |

Source: own elaboration based on “*Choice of Healthcare Providing Facility and Associated Factors among Government Employees in Nekemte Town, Western Part of Ethiopia. Compliance of Nurses to National Nursing Process Guideline in Tercha General Hospital, Southern Ethiopia 2018: Case Study*” by Garedeu, Woldie and Walle (2019), “*Which criteria determine the winner for patient?*” by Can and Isin (2018), “*Determinants of Patients' Choice of Healthcare provider – a Study of Selected Private Hospitals in Delhi – NCR*” by Malik and Shrama, (2017).

3. Description of research method

Taking into consideration problems with access to public health care system's services and increasing popularity of private sector, the following research question was proposed: What are the most important reasons of private medical services choice by patients in Poland? In reference to the research question, main purpose of the study was posted, which is the identification of key incentives to choose private health services. The empirical research was done in August 2021 and involved Polish citizens which used private medical services in the last 5 years, regardless of the method of payment. Limiting the research to the private sector results from its dynamically growing share on the market. Surveys were conducted using Google web forms. The survey would ensure full anonymity of respondents to gather reliable data. The questionnaires were shared and made available to respondents for one week. After this period, a proper amount of surveys was gathered and the access to the survey questioner was closed.

The first question in the survey concerned declaration of attendance in private health services and allowed to select proper respondents. Questionnaires with required data were included in the research sample. A total of 122 answers of participants were chosen to research analysis. Table 2 presents basic information about the respondents.

Table 2.
Basic information concerning respondents

| Information about respondents | | |
|--|--------|-------|
| Feature | Number | Share |
| Gender: | | |
| Female | 81 | 66% |
| Male | 41 | 44% |
| Place of residence: | | |
| village | 37 | 30% |
| town with 100 000 inhabitants to 2 500 000 inhabitants | 46 | 38% |
| city with more than 250 000 | 39 | 32% |
| Age (in years): | | |
| 18-25 | 40 | 33% |
| 26-35 | 33 | 27% |
| 36-50 | 28 | 23% |
| up to 50 | 21 | 17% |

Source: own elaboration based on research results.

The results obtained in the study are presented in the following section of the article. In the last part of the study conclusions are selected and main recommendations proposed.

4. Results of empirical study

The first question in the survey questionnaire concerned the fact of using private medical services, therefore, participants were asked if they had used private medical services in the last 5 years. The purpose of the question was to select the research sample. The 5 year period was chosen due to contemporary situation of global SARS-CoV-2019 pandemic to alleviate its influence on the study. At this stage, people who did not meet the criteria consistent with the adopted research objective were rejected. The results are shown in the Figure 1.

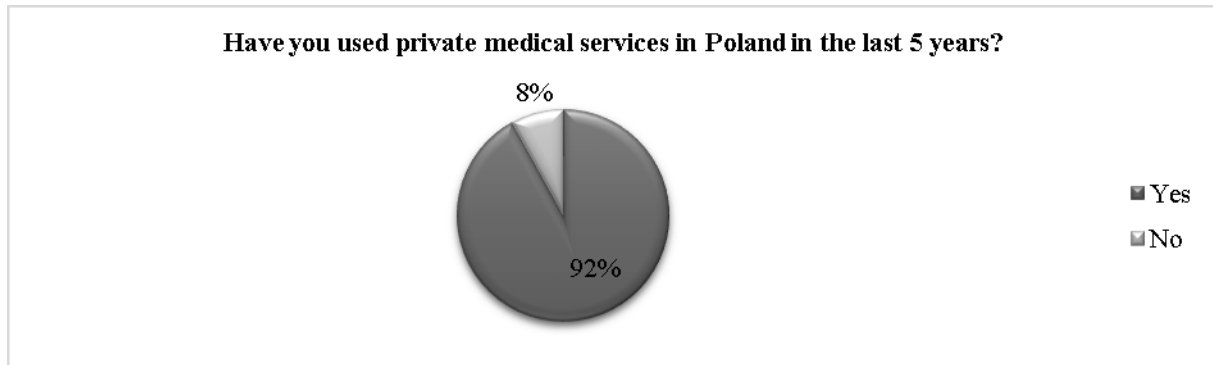


Figure 1. Use of private medical services in Poland over the last 5 years. Source: own study.

The vast majority of respondents have used private health services in the last five years (92%). People who answered in the negative gave the following reasons: do not have such a need due to lack of serious health problems; possibility to wait for an appointment financed by the National Health Fund; private services are too expensive in comparison with the change in waiting time; not affordable due to personal financial reasons. One person indicated that he does not live in Poland.

The second question referred to the form of financing the visits (Figure 2). Suggested answers included private insurances and self-funding.

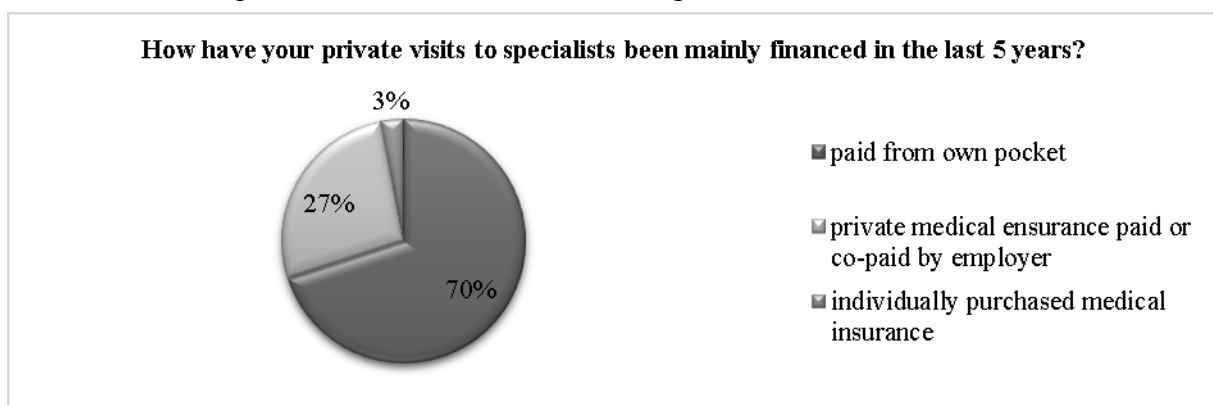


Figure 2. Main forms of financing the use of private medical services. Source: own study.

The majority of people paid for the access to private health care from their own pocket (70%). Taking into account the place of residence, highest percentage of self-funding occurred in group of respondents living in rural areas (80%), than in the towns up to 250 000 inhabitants (70%) and on the last position in cities with more than 250 000 (62%). Next following share on

the figure was private medical insurance paid or co-paid by employer (27%). When the place of residence is taken into account, the relationship is inverse to paying from own pocket because the biggest contribution from employers who funded medical insurance occurred in cities with more than 250 000 inhabitants (36%), then in towns with up to 250 000 inhabitants (30%), with the smallest share in rural areas (14%). Altogether, only a small number of people (3%) have individually purchased medical insurance.

Another question closely related to the aim of the study concerned the relevance of the indicated factors towards the decision to use private medical services in Poland. The earlier described 12 categories were indicated and respondents were asked to rate the importance of each factor in a 5-grade scale. The factors included:

- recommendations obtained (from family, friends, internet portals containing opinions about physicians),
- own positive experience with private medical care,
- courtesy of staff and individual approach,
- choosing a particular physician,
- the conditions of the facility (cleanliness, infrastructure, ease of access for people with disabilities),
- modern equipment and up to date treatment techniques,
- location and transport (distance from home, parking availability),
- quality (time per patient, avoidance of unnecessary stress, low complication rates),
- availability of appointments (waiting time, length of treatment, no delays),
- reputation of the medical institution (opinion about the institution or doctor),
- transparency of treatment (clear explanation of the problem, participation in making decisions about treatment),
- informal acquaintances with a staff member working at particular facility.

Each respondent was asked if a specific factor is either very important, important, rather not important, not important or has no effect on their decision to use private health care services. The results of answers are shown in Figure 4 and Figure 5. Answers marked as “I don’t know” were excluded from the charts due to no provided informational value.

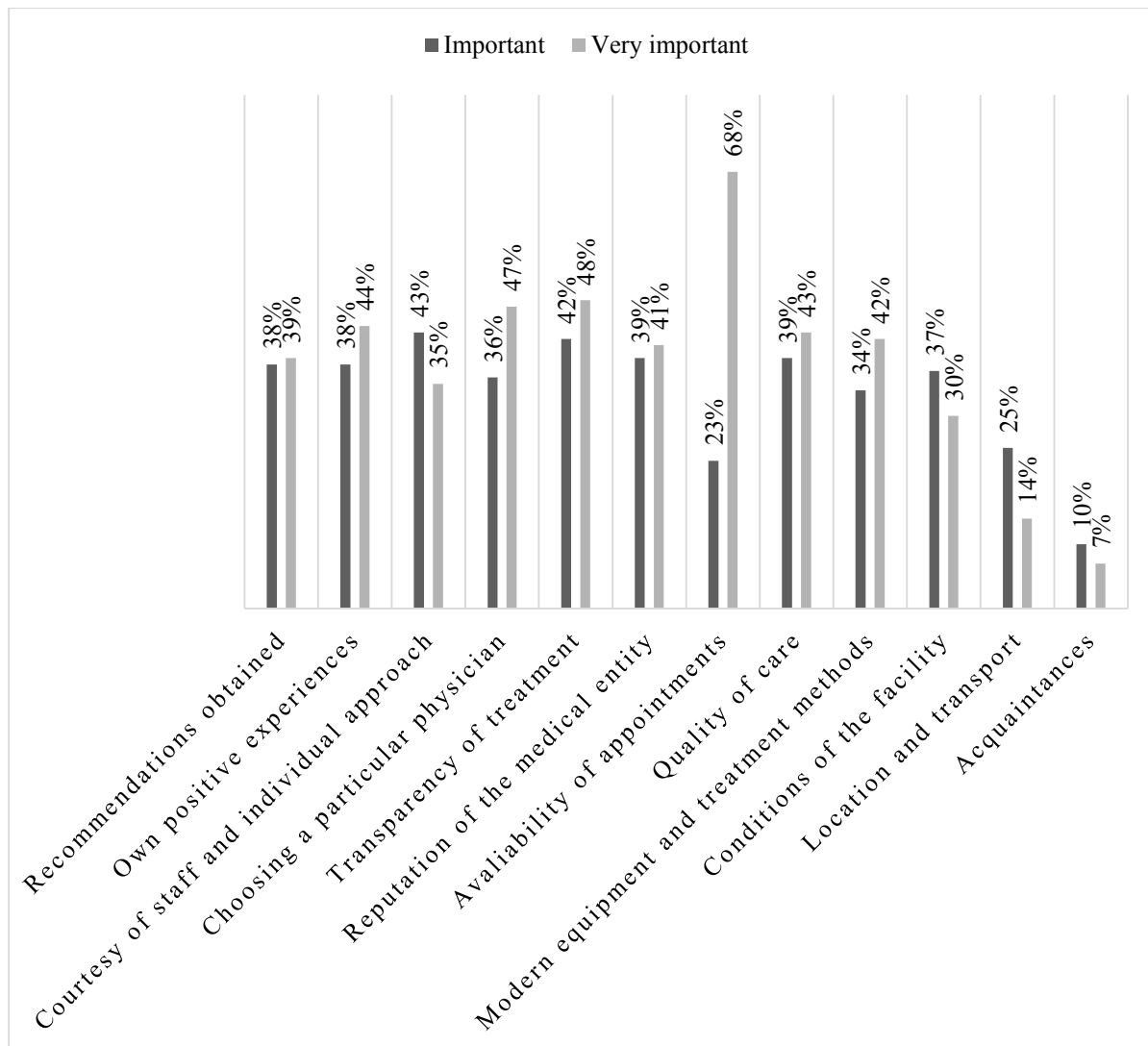


Figure 3. The most significant factors of private medical services choice. Source: own study.

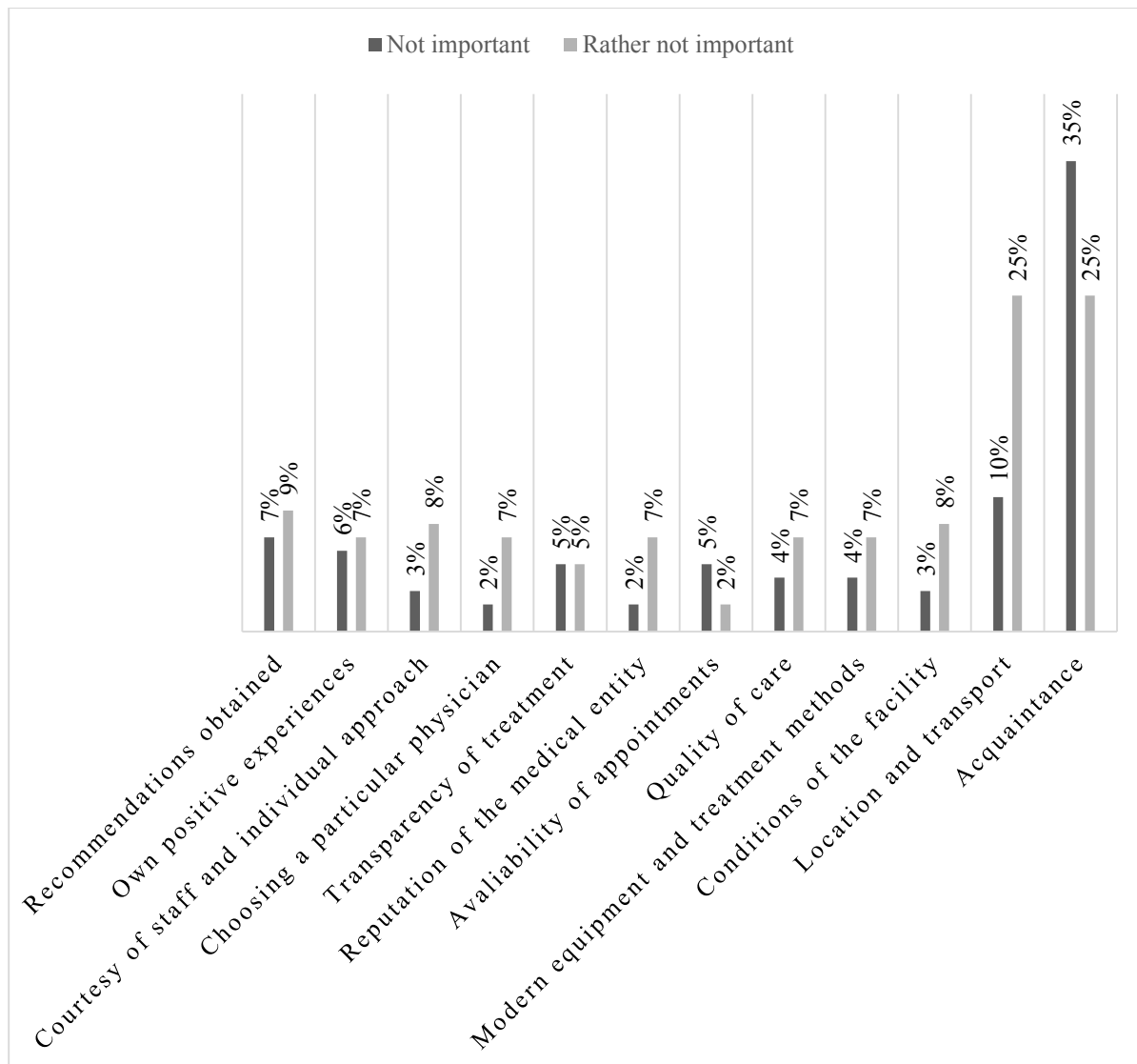


Figure 4. The least significant factors of private medical services choice. Source: own study.

Most of the studied factors (10 out of 12) were indicated as important or very important by the majority of respondents. The study revealed that the most significant factor for participation in private health care services is the availability of appointments with almost 68% of respondents finding it very important. Only two factors, location and transportation and informal acquaintances proved to be perceived very differently by the respondents. Informal acquaintances factor was chosen by the most respondents as not important (35%) and by least respondents as important (10%) or very important (7%). Location and transportation were chosen approximate by the same number of respondents to be important or very important and of low or no importance.

Next question led to finding the most frequently visited specialist by research participants over the past 5 years. Because of differences in response distribution resulting from distinct medical needs, in this part of article the research sample is additionally divided into two groups depending on sexes. Results of answers are shown in the Figure 5 and Figure 6.

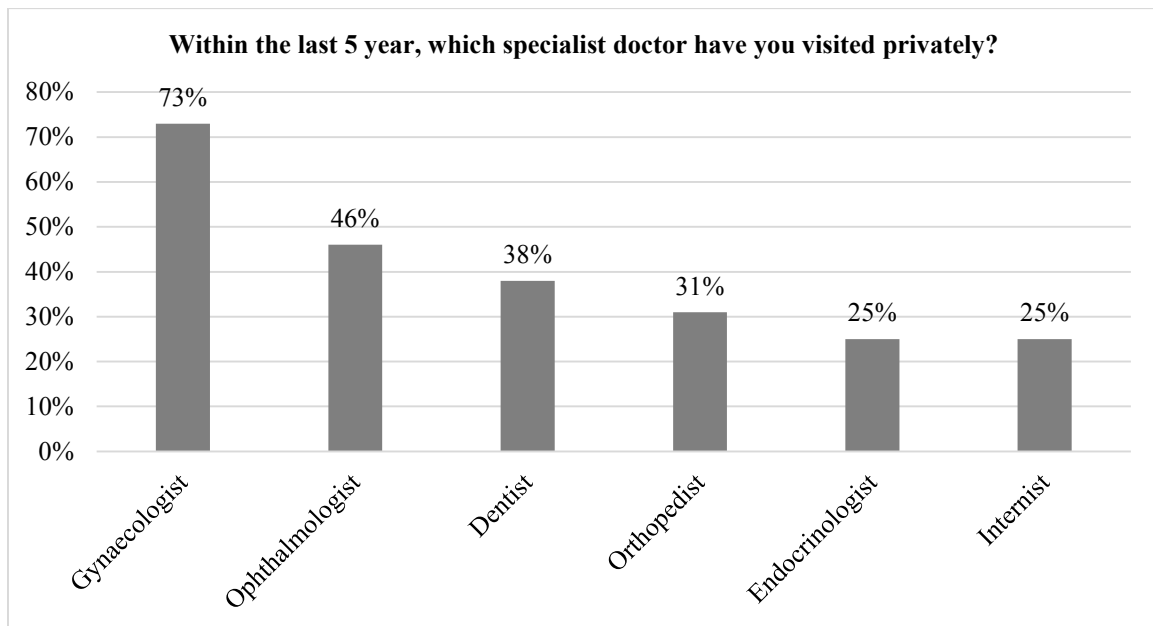


Figure 5. The most common choice of specialists among respondents within last 5 years – women. Source: own study.

The biggest number of women (73%) indicated a gynecologist as a specialist visited in the last 5 years. Many female respondents also chose ophthalmologist (46%) and dentist (38%). A notable number of women chose orthopedist (31%), which is also frequently indicated by men, and endocrinologist (32%), which on the other hand is rarely chosen by the male group. Internist's services are prevalent in both women (25%) and men groups. Results for men are shown below in Figure 7.

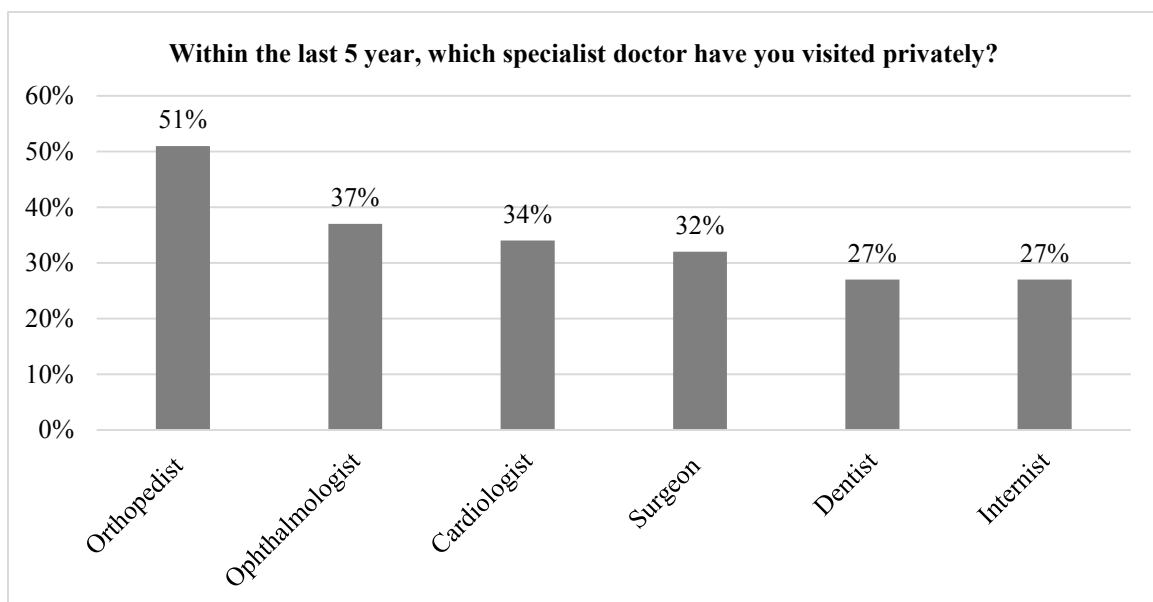


Figure 6. The most common choice of specialists among respondents within last 5 years – men. Source: own study.

The biggest number of men indicated orthopedist (51%). The second most attended specialist was ophthalmologist (37%) in both men and women groups of respondents. Then approximately the same number of men respondents chose cardiologist (34%) and surgeon (32%). The last major group of men indicated dentist (27%) and internist (27%) with the same frequency. Moreover, internist was indicated by a similar number of men (27%) and women.

5. Conclusion and recommendations

Polish health care sector is one of the national economy segments. However, an insufficient number of physicians able to deliver medical services, deficient financial funding and several problems related to waiting time and availability of appointments, support private sector popularization. Moreover, the current situation in public health care system is extremely difficult due to recent SARS-CoV-2019 pandemic burdens. The main purpose of this article was to explore the main factors of choice of private medical services by Polish patients. The answers collected in the survey are not strongly polarized and reveal similar opinions of respondents about factors of private medical services choice in Poland. Over 90% of respondents indicated that they have used private medical services in Poland in the last 5 years. The largest number of people taking part in the study indicated that they pay for private health services with their own funds. The reason for having to pay for medical services with own funds is probably due to the lack of an alternative in the form of private insurance provided by the employer.

According to MAHTA (2019), the most important problem of public health care system in Poland is limited access to specialists. Based on the results of Watch Health Care Foundation by MAHTA and comparing it to data collected in April and May 2018, accessibility to treatment has even worsened. To obtain specialist advice, one has to wait on average 3.9 months, up to 11.6 months for an appointment with an endocrinologist (Watch Health Care, 2019). During this time, the patient's health condition may deteriorate and treatment modalities may change to more burdensome in consequences. In addition, it is a discomfort and sometimes suffering for the patient, so the decision to choose private health care for the purpose seems justified.

Taking into consideration the choice of availability of appointments, it is worth implementing and developing solutions that make it easier for patients to schedule visits. Platforms that allow appointments to be registered without contacting the registration desk should be a widely available solution. In addition, good organization of the health care entity allows adequate management of appointment times and avoidance of delays. This may be another important factor for patients, so it is worth investing in the competence of staff, so that in the case of unplanned and independent delays they are able to resolve the situation in

an appropriate manner, without discouraging the customer from continuing to use the services of the facility.

As the private healthcare sector develops and becomes more competitive, maintaining long-term relationships with patients is crucial. Nowadays, Customer Relationship Management forms the basis of an organization's success by putting the customer and their needs at the center (Wroblewska, 2013).

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THE PARTICIPATION OF POLISH FEMALE SOLDIERS IN WORLD WAR I

Iwona SZKUDLAREK

War Studies University, iwonaszkudlarek@onet.eu; ORCID: 0000-0001-7125-7004

Purpose: The aim of this paper is to outline a history of the participation of Polish female soldiers in the World War I. It outlines their commitment, struggle, and efforts made to contribute to Poland's military effort during the war. The article describes the legal situation of the military participation of women in Poland, and also deals with their role and place in society.

Design/methodology/approach: The aim of the article was to organize, systematize and describe the knowledge about the role and participation of female soldiers of the Polish armed forces during the World War I. The above theoretical goal has been achieved by applying the methods of analysis, synthesis, deduction, induction and inference.

Findings: In the course of the work were found results, which testify to historically underestimated contribution of women in war efforts. These, both in reinforcement and in other spheres of hostilities significantly contributed to the end of the war and its final result.

Social implications: Publication of the article may contribute to increasing social awareness of the underestimated participation and involvement of female soldiers in military action during the war and of the social and cultural roles they fulfill.

Originality/value: The article organizes and systematizes the knowledge about the military service of women in the described period. It is addressed both to people associated with all kinds of uniformed services, management and command, as well as people from the civilian environment.

Keywords: Polish Soldiers, Female Soldiers, World War I, Polish Armed Forces, Participation of Women in Armed Forces.

1. Introduction

As de Beauvoir writes in her book *The Second Sex: (...) man rises above the animal not by giving life, but by risking it; therefore humanity places higher not the sex that gives birth, but the sex that kills* (Beauvoir, 2003, p. 84). According to the French philosopher, the marginalisation of women in Western culture was directly connected to their exclusion from warfare. They were joined by full-fledged entities – which women, children and old people were not – ready to sacrifice their own lives in the name of communal, abstract, supra-individual

values, important from the perspective of the community's survival, which they did at the expense of sacrificing personal happiness. Thanks to this they were distinguished, admired and celebrated in culture. A warrior, a knight, a soldier, just like a thinker, a researcher, or a scientist (struggling with nature and its mysteries) are ready to give up their personal, social, or family life in the name of achieving higher goals, usually with the full understanding of their surroundings (Derra, 2013).

For years or even centuries, the military has been associated with a masculinised, male-commanded military. Although women have participated in wars throughout history, this fact was caused by crises in the form of a shortage of men or a state of emergency. These were situations of an impermanent and irregular nature, resulting from the need of the moment, and therefore also unregulated by customs and, moreover, by law. This phenomenon was mainly due to the lower social position of women than men.

However, with the advent of more widespread access to education for women, followed by opportunities for gainful employment, the status of women has slowly changed. This included both social and occupational status, and then economic and political status.

The period of World War I was a watershed when the first attempts were made to organise women's military service. In 1918, Poland regained its independence and women were given the right to vote. Afterwards, women were involved to a much greater extent in the fighting during World War II in order to start legally regulated women's military service in specific corps from 1989.

As mentioned earlier, World War I saw a major breakthrough for women who wanted to enter military service. This is when the first attempts are made to create regular female military formations. The failures of the uprisings further aroused the fighting spirit of Poles and Polish women, resulting in the regaining of independence in 1918.

Receiving basic military training before World War I was accomplished in the form of women's participation in shooting squads, scouting or the Union of Polish Youth. Women fulfilled their duty to their homeland during World War I and the war with the Bolsheviks by serving in the Polish Legions, the Polish Military Organization (PMO), and the Women's Voluntary Legion (WVL) (Formalno-prawne, 2002).

2. Participation of women in legionary formations

The beginnings of women's activity in the Polish Legions date back to the years 1910-1912, when in Galicia women were allowed to participate in paramilitary work. Initially, these were women's sections operating alongside the men's Riflemen's Associations and then, from 1912, independent female paramilitary units. This happened even before the outbreak of war, thanks to Piłsudski's clear position: *I believe that women are suitable for any auxiliary service in the*

army, at the front and at the back of the army. I have thought over these matters and believe that work in strictly military formations is not suitable for women, but elsewhere (...) for any work they can be used to replace men and thus increase the ranks of the army (Piłsudska, 1955, p. 182).

According to Piłsudski's predictions, the war with Russia was to be guerrilla-oriented, and the members of the riflemen's units were to form the basis of the courier-intelligence and sabotage operations of the Kingdom of Poland. As a result, the training program was adjusted to these assumptions and covered the scope of organisation and deployment of the Russian army, terrain studies, diversionary techniques, communications, and field service. These predictions came true after the outbreak of war on 6 August 1914.

In the second half of August 1914, the riflemen's units were transformed into the Polish Legions. From 8 September 1914 the Legions were transferred to the Austrian ordnance's staff, as a result of which they were supplied from Austro-Hungarian uniform warehouses. These changes resulted in Piłsudski issuing an order on 10 September 1914, directing that all women who were with the army be sent back to Kraków. This order gave rise to the removal of women from service in the line units, whose involvement was deemed unnecessary at this stage of the Polish Army's formation. The second reason for this may have been the reluctance shown by legionnaires towards female legionnaires at the front, even those serving as nurses or supply officers. It was probably too much of a challenge for the men, who did not know how they were supposed to relate to the presence of female legionnaires in frontline units. However, there are not enough sources to say conclusively whether this phenomenon was negative.

Some female riflemen, however, found jobs directly related to the military formations. These included Alina Pytlakowska (a nurse in the First Brigade of the Legions) or Barbara Kossuthówna and Ludmiła Modzelewska (who served in a field and military hospital). Selected women also served in the Female Intelligence Unit (formed in August-September 1914), which was part of the Intelligence Unit of the Polish Armed Forces, later renamed the Intelligence Unit of the 1st Infantry Regiment (until 27 August), and from December 1914 already functioning under the name of the Intelligence Unit of the 1st Brigade of the Legions.

The commander of the women's courier and intelligence service of the Intelligence Unit was Rajmund Jaworski, but it was Aleksandra Szczerbińska who managed it on a daily basis. Women who knew Russian were admitted to the Unit, mainly students, and the age range of female intelligence officers was from 20 to 65.

The activity of the Intelligence Unit itself should be divided into the first period, which lasted from August 1914 until the withdrawal of Piłsudski's army from 16-24 September near Nowy Korczyn and Opatowice. During this period tactical intelligence was conducted in the planned areas of warfare. From December 1914 the second period is distinguished, when the Intelligence Unit was liquidated (April 1915) and women intelligence officers operate in the conditions of the positional warfare performing mainly courier functions (Dufurat, 2001).

On the basis of an order dated 25 March 1915, it was decided to disband the Intelligence Unit of the First Brigade, which lasted until the end of the year (Dufurat, 2001). It was connected with a crisis in relations between Piłsudski and the Austrian military authorities.

The final number of women serving in the frontline units of the Legions is impossible to determine, since no archives have survived. Undoubtedly, all female legionnaires performed their service with courage and dedication, although only a few were able to demonstrate their skills on the battlefield. The only woman we know was active on the frontlines was Wanda Gertzówna.

Despite the dissolution of the Intelligence Unit, many women did not finally part with military service. As early as 1918-1921 the members of the first Polish women's military formation took part in the Polish-Ukrainian fights in Eastern Galicia. Among them were Zofia Plewińska, Janina Prus-Niewiadomska, Olga Stawecka, Ludwika Daszkiewiczowa and Wanda Gertz, who commanded the Vilnius WVL Battalion during the defence of Vilnius, while Olga Stawecka was commander of the WVL Battalion in Lviv and commanded the WVL Company during the defence of Vilnius.

In summary, 46 women were involved in the service of the Intelligence Unit. Twenty of them were decorated with the First Brigade Badge *for Faithful Service* by Commander Piłsudski in 1917. Seventeen couriers were nominated for the Cross of Valour. Seven women were awarded the Order of Virtuti Militari. Importantly, despite the Russian search, not a single female courier was killed during her intelligence service.

3. Polish Military Organisation

In 1913 the Polish Women's League of Emergency Service began its underground activity in the Kingdom of Poland. Similarly in the Austrian partition the League of Women of Galicia and Silesia was founded in 1914. Both organisations joined forces and led to the creation of female branches of the Polish Military Organisation (PMO) founded by Józef Piłsudski. The tasks of these branches included participating in the work of the technical department or running a passport office. As a result of the decision of the PMO command, after the mobilisation of August 1915, the women's units were disbanded, as a result of which they could not take part in the military activities. However, in October of the same year, the situation changed as a result of the appeal issued by the Supreme Command for women to re-establish cooperation with the underground. Subsequently, subdivisions were organised into sections and platoons, in accordance with the organisation of the army in force at that time. Moreover, in 1916, the historic oath of women soldiers of PMO from the Warsaw district took place (Nałęcz, 1984). Membership in the POW entailed such tasks as intelligence work, gathering weapons, courier and office work, and preparing equipment for combat. At the end of the

occupation, the organisation had about 800 women in its ranks, working in 18 cells (Nałęcz, 1984).

Thanks to the Bolsheviks' conviction that Polish women were not involved in military cooperation, they were subjected to less frequent inspections. Initially, this allowed them to effectively fulfil the role of liaison officers and work for the intelligence service. Once the method of transmitting information stitched into clothing was exposed, the risk of intelligence service increased significantly. In 1920 alone, 108 "PMO women" were executed in the East, and the number was growing. 87 women were decorated with the Cross of Valour and 21 were awarded the Virtuti Militari Order, 16 of them posthumously (Peplowski, 2003). Jadwiga Barthel de Weydenthal and Maria Kwiatkowska-Stefanowska, who served as commanders of the women's unit, were particularly distinguished during the intelligence operations of the PMO (Kozłowski, Wrzosek, 1984). Wanda Gertz (known at the front as Kazimierz Żuchowicz), who was engaged in service in the Warsaw Battalion formed in 1915, should also be mentioned as one of the distinguished female soldiers. This battalion fought at the front, where women were forbidden to serve in line service, even though they worked in barracks, performed administrative functions, sewed uniforms, and completed soldiers' equipment (Nowakowska, 2009).

4. Women's Voluntary Legion

Despite the end of World War I as a result of the signing of an armistice between Germany and the Allies, security and order in the areas previously affected by the conflict was not so obvious. In Greater Poland the Guard and Security Service and the Civic Guard were organised. Similarly, in the eastern lands the situation was uneasy. In November 1918 Lviv was taken over by the Ukrainians, which resulted in the members of the Polish Women's Citizens' Committee, such as Maria Dulębianka, Michalina Mościcka and Aleksandra Zagórska, taking up the task of defending the city. The City Civic Guard, which was formed at that time, took the initiative of creating its female branches, as a result of which the Women's Civic Militia (MCM) was created. It was divided into three groups:

- battle group – obliged to take part in fighting in case it occurs in the city,
- civic group – not obliged to take part in direct fighting,
- courier group – assigned to liaison service between military commands and the Municipal Citizen Guard.

The MCM, as a non-military formation, could not guarantee women the right to remuneration and supplies. This prompted the organisation's main activists to approach the city with the initiative of transforming the MCM from a militia organisation into a military formation – the Women's Volunteer Legion (WVL). The WVL was formed in 1918 in Lviv as

a Polish volunteer military organisation. It functioned until 1921, when it was liquidated (Marcinkiewicz-Gołaś, 2006). The WVL should be regarded as the first regular female formation, created in connection with the battles for Lviv and Vilnius Nowakowska. It also made its mark in the Polish-Soviet War, and had its counterpart only in Finland (Dadej, Abryszeński, 2019).

At that time the need for this type of organisation was great, which resulted from the unsettled situation in Lviv, where robberies, thefts, and organised looting were commonplace. As a result of women's conscientious and compulsory service, the Second Voluntary League of Women (SVLW) was founded in May 1919 in the Vilnius area by the command of the Lithuanian-Belarusian Front, and Wanda Gertz was appointed its commander. The rules of service in the VLW consisted primarily of guard, stage and patrol duties, and in justified cases, first-line service. The SVLW was intended to serve as an auxiliary (Skrabacz, 2008), and the rules of Organisation of the SVLW stated that:

- women's divisions are treated as divisions of the Polish army,
- they are not intended to serve at the front,
- in the military service the natural predispositions of women are taken into account,
- preference is given to administrative, guard and communications service,
- With the exception of guard duty, women are forbidden to serve with arms.

Despite the assumption that the VLW was to be an auxiliary formation, in reality women took an active part in the battles for Lviv and Vilnius, as well as Warsaw. In the defence of Lviv 427 women, known by name, took part, of whom 17 fought with arms. The ashes of 66 women are in the Defenders of Lviv Cemetery (Klimecki 2012). A detailed numerical listing of women and men in the defence of Lviv is presented in Table 1. below.

Table 1.
Participation of women and men in the defence of Lviv

| Type of service | Number of women | Service with weapons |
|--------------------------------|-----------------|----------------------|
| Armed service | 17 | 3994 |
| Auxiliary service | 410 | 1601 |
| Total female in service | 427 | - |
| Total men in service | - | 5594 |
| Total women and men in service | 6022 | |

Source: „Obrona Lwowa 1-22 listopada 1918 r. Organizacja listopadowej obrony Lwowa. Ewidencja uczestników walk”, Volume III, Warsaw 1994.

As a result of the threat to the capital, in August 1920 a decision was made to form a volunteer line battalion in the strength of two companies, which consisted of about 400 female legionnaires (Skrabacz). In total, 28 women and several thousand men were decorated with the *Virtuti Militari* War Order in the years 1918-1921 (Kromp, 2012). Table 2 below shows the numbers of VLW battalions as of August 15, 1920.

Table 2.*The number of the VLW battalions as of 15 August 1920*

| Guard units of VLW | Commander's surname | Number | | | | |
|-------------------------------------|------------------------------------|----------|--------|------|----------|------------|
| | | officers | cadets | NCOs | privates | total |
| VLW Lviv | Sub-lieutenant Maria Szymańska | 3 | 6 | 42 | 332 | 380 |
| VLW Warsaw | Lieutenant Ludwika Rudawska | 2 | 2 | 9 | 252 | 263 |
| VLW Kraków | Sub-lieutenant Józefa Pawłowska | 1 | - | 6 | 218 | 224 |
| WVL Poznań | Sub-lieutenant Kamila Janota | 1 | - | 6 | 197 | 203 |
| WVL Grudziądz | Sub-lieutenant Janina Kowalska | 1 | - | - | 210 | 211 |
| WVL Przemyśl | Sergeant Paulina Walmoden | - | - | 4 | 250 | 254 |
| Auxiliary Company Warsaw | Sub-lieutenant Zofia Kremerówna | 4 | 1 | 32 | 563 | 596 |

Source: „Rola kobiet w walkach o kresy południowo-wschodnie Polski” by T. Grzegorzczuk. Zeszyt Naukowy Muzeum Wojska Polskiego w Białymstoku no. 21/2008.

As a result of the end of the war in 1921, Poland began the process of demobilisation. The high costs of maintaining the army in peacetime caused the Ministry of Military Affairs to declare the functioning of the legions groundless. Women's service had both its supporters and opponents in society. Deserters and men who evaded the draft for obvious reasons spoke negatively about the operation of the Women's Civic Militia, but during times of greatest danger, women's service resulted in a greater belief in victory in society. Supporters argued that the service enabled men to be relieved of courier and sentry duties, and if necessary, combat operations.

Piłsudski himself, in his 1921 speech in Vilnius, expressed his clear support for women's military service, saying: *I will tell you what I am thinking about now. I think that women should be drafted for military service. It is not democratic for only men to serve in the army and women not. I have already done it in the General Staff and in the Ministry of Military Affairs, which resisted, and I hope to do it in the Sejm as well* (Złote myśli, 1926, p. 19).

However, the dissolution of the WVL was not the end of women's activities since in October 1922 the Social Committee of Women's Training National Defence was established, which provided for the training of women and young women for auxiliary educational, clerical, economic, communication and rescue services. However, an undeniable factor that contributed to the liquidation of the WVL was the public aversion that initially caused mistrust and even some disrespect (Odziemkowski, 1996).

As a result of the Act on General Obligation to Serve in the Military Service passed by the Polish Sejm in 1924, paragraph 62, initially included within the project and referring to women's auxiliary service, was not published. It says the following about universal military service (The Act of 23 May 1924, 1924): (...) *essentially the same for all, is the personal duty of every male citizen of the Republic*, and that: (...) *in time of war, in addition to the obligation of universal military service, there shall be an obligation of auxiliary service. This obligation*

shall apply to all male citizens of the Republic of Poland, between the ages of 17 and 55, who are not performing military service in the regular army, in the reserves or in the army of the mass mobilisation.

The May Coup of 1926 caused Józef Piłsudski to recommend the creation of the Women's Physical Education and Military Training Department (WPEMTD), of which M. Wittek became the head (Wojskowa służba kobiet a restrukturyzacja, 2002). The above-mentioned Social Committee was authorised by the Minister of Military Affairs to conduct the preparation of personal reserves in case of war (Laszczak, 2000). As a result of this recommendation, in 1928 the Women's Organisation for the Training of Women for National Defence (WOTWND) (Pindel, 1995), which was subordinate to the Department, was set up. Eligible members were to pass on knowledge of passive anti-aircraft defence, gas defence, and the rules of assistance in the army during wartime (Odziemkowski). Military training and education continued to be provided separately for men and women. As of September 10, 1937, the Minister of Military Affairs and the Minister of Religious Denominations and Public Enlightenment issued an order that women's military service be introduced as a compulsory subject in both women's and men's high schools (Laszczak).

On April 9, 1938, a new *Act on general military duty* was passed, which, unlike the 1924 act, grants women the right to perform alternative military service. It states that: *Women shall be subject to general military obligation if they accept this obligation voluntarily (...)* (The Act of 9 April 1938, 1938). This obligation referred to auxiliary service for women between 19 and 45 years of age, who had to appear before a medical commission consisting of women and could perform this service on an equal footing with men, in the specialties listed in the Act: anti-aircraft and anti-gas defence, guard service, communication, technical, fire-fighting, military health service, transport, office service, and others, necessary for the defence of the State The Act of 9 April 1938. By 1939, however, there was still no joint military training for men and women (Laszczak).

The period of striving for independence saw a breakthrough in the creation of the first regular uniformed formation of women in the Armed Forces - the Women's Voluntary Legion (WVL). Thanks to the achievements of the WVL, women proved their military usefulness, which helped to dispel the stereotype that they were useless. The years of the Second Republic of Poland were a period of exceptional involvement of women in defence preparations and in strengthening the defence potential of the state in paramilitary organisations.

5. Conclusions

All way back, Plato in his considerations saw women in military service. Although he foresaw less burdensome functions for them. These were purely theoretical thoughts as they did not match the Athenian reality. However, women did have their share in the armed act, although not all sources have been preserved, often this may have been the result of marginalising the value of their actions. The initial actions of the Samaritan women, and their increasing participation in national liberation struggles and national uprisings, slowly made their marks on pages of history. Jadwiga is mentioned as the first to perform a commanding function, and the most famous participant of the November Uprising – Emilia Plater. Initially, their functions were limited mainly to organising field hospitals, helping the wounded and sick, securing food and other aid aspects. As the Polish national spirit striving for independence strengthened, the nation solidified in its efforts to execute its right to freedom and independence. This is very much influenced by organic work and education, which strengthens the sense of patriotism and national belonging, and above all increases social consciousness, including that of the lower social strata. Only the time immediately before World War I set the pace for the development of women's military participation, and then the outbreak of war itself.

Receiving basic military training before World War I was accomplished in the form of women's participation in shooting squads, scouting or the Union of Polish Youth. Women fulfilled their duty to their Homeland by serving in the Polish Legions, the Polish Military Organization (PMO), and the Women's Voluntary Legion (WVL) (Formalno-prawne). In total, 28 women and several thousand men were decorated with the *Virtuti Militari* War Order in the years 1918-1921 (Kromp).

World War I saw the use of airplanes and battle gases previously unknown in combat. The arms industry was becoming an increasingly important determinant of the final outcome. The male workforce that went to the front caused them to be replaced by women in factories and manufacturing plants. Ladies began to toil in assembly lines, participating in the production of airplanes, tanks, weapons and ammunition in the broadly-defined arms industry, and working in chemical plants. They began to be employed as streetcar drivers and conductors, and operating production machinery such as cranes, lathes, and milling machines was no longer foreign to them.

External factors led to the first step in opening the door to professional careers for women, and also contributed to the rise of feminism. Despite criticism of working women in the form of neglecting their husbands, self-focus resulting from later child births and giving birth to fewer children as a result of their employment, wearing make-up (or lack thereof), or (often imagined) lack of competence, ladies from the lower social strata were facing the fact that minds were already made about them. One salary was no longer enough to support a family, and work became a necessity. In 1921, there were 83 working women for every 100 working

men; a decade later, the ratio was already 65:100. This was the result of demobilisation and favoured employment laws for men. However, the number of working women continued to show an upward trend despite greater difficulty in finding employment, and their wages, especially in previously male-dominated industries, were between 40 and 50 percent of those received by men (<https://wielkahaistoria.pl>, 2021). By comparison, in 1917 in Germany the number of women employed in industry alone was 17.7% higher than the number of men (Sobczyńska, 1997), while in Britain the number of 50,000 working women had increased fivefold by the end of the war (Zgórniak, 1998).

Historians recognise the time of World War I as a time of social transformation in which women became beneficiaries of won rights. By the *Decree on the electoral law for the Legislative Sejm of 28 November 1918*, it granted active and passive suffrage to all its citizens, regardless of gender. Article 1 of the Decree reads: *The elector for the Legislative Sejm shall be every citizen of the state, without distinction of sex, at least at the age of 21 years by the date of the announcement of the election*, and article 7 of the same law guarantees that *the electors for the Sejm shall be all male/female citizens of the state who have the active right to vote*. The first elections were held on 26 January 1919, the turnout was about 70%, and 8 female deputies and 432 male deputies were elected to the Sejm, which was less than 2% of the women in the general composition of the chamber (Dadej, Abryszeński).

Women have the opportunity to pursue higher education. Until now, Polish women have had to seek their chances for scientific self-fulfilment abroad, where the first opportunities to study for women were offered by the Paris Sorbonne or universities in Switzerland, Belgium and England. However, the conditions that made it difficult for women to study were mainly economic factors, the crisis of the 1930s and the domination of both male colleges and vocational schools where courses of study were "appropriate for men" (Laszczak). At that time, the stereotype that women should study the humanities began to be propagated, since technical studies were reserved for men. The effects of these actions are still being remedied today, in the form of breaking stereotypes and searching for talents in the hitherto often ignored intellectual potential of the half of society made up of women. However, despite the fact that the Second Republic offered its female citizens modern legal solutions at the constitutional level, which, when converging with the banal practice of everyday life, no longer provided a guarantee of equal opportunities in their execution.

It was only the Polish authorities in exile that allowed the status of the military service of women to be regulated. This was made possible by a Decree of the President of the Republic of Poland issued on 17 October 1943, which stated that women could perform military service as volunteers on equal terms with men.

After the end of the World War I and II, women's service regained its incidental character, a phenomenon that was common throughout the world. In 1950, the first postwar law on universal defence obligation was passed, according to which only men between the ages of 18 and 50 were subject to this obligation (The Act of 4 February 1950, 1950). There have been

sporadic cases of women being called up to the army, but the beginning of a qualitative breakthrough in this field can be found in 1988, when the recruitment of women to the military medical corps began, and then after Poland joined the North Atlantic Alliance in 1999. These changes were caused, among others, by feminist movements, demographic and economic transformations, which could not be avoided in a developing society. Women entering the labour market filled the space of the demographic decline and also supported the growing economy in which the need for physical labour began to lose its importance.

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**THE RELATIONSHIP BETWEEN THE ATTITUDES
AND BEHAVIOURS TOWARDS BODY
AND THE RISK OF OCCURRENCE OF EATING DISORDERS
IN THE GROUP OF YOUNG WOMEN**

Justyna TREPKA-STAROSTA^{1*}, Agnieszka ROSZKOWSKA², Jolanta STAROSTA³,
Anna PIEKACZ⁴

¹ Katowice Business University GWSH, Katowice; justyna.starosta@gwsh.pl, ORCID: 0000-0002-8267-9605

² University of Bielsko-Biała, Bielsko-Biała; aroszkowska@ath.bielsko.pl, ORCID: 0000-0002-1132-8840

³ Jagiellonian University, Institute of Applied Psychology, Kraków; jolanta.starosta@uj.edu.pl,
ORCID: 0000-0003-1776-7155

⁴ Silesian University, Institute of Psychology, Katowice; anna.piekacz@us.edu.pl,
ORCID: 0000-0001-7511-5599

* Correspondence author

Purpose: This research is devoted to the phenomenon of various factors related to the occurrence of eating disorders. The paper focuses on the subject of body image, attitudes towards body and behaviors of young women.

Design/methodology/approach: Analyzing the results of the respondents, it was necessary to check whether there are any factors which predict the occurrence of eating disorders, as well as whether the respondents have knowledge of basic eating disorders such as anorexia, bulimia or obesity. Women aged 19-25 years took part in the study, where such variables as attitudes and behaviors towards their bodies, beauty stereotypes, peer criticism, methods of improving appearance, satisfaction with their appearance, physical attractiveness and self-esteem were verified. The following methods were used in this research: Body Image Questionnaire, The Scale for Using Appearance Enhancement Methods, The Scale of Satisfaction with Individual Body Part and Body parameters, Multidimensional Self-Esteem Inventory.

Findings: The analysis of the results indicates that there is a significant relation between low self-esteem, peer criticism, the need to be accepted and the occurrence of eating disorders.

Practical implications: The research can contribute to the development of new educational programmes in schools to increase young people's knowledge and awareness about eating disorders. Furthermore, the result may also be important in the prevention of possible diseases.

Originality/value: This research can contribute to the better understanding of psychological conditions of eating disorders, especially on Polish population of young women.

Keywords: eating disorders, anorexia, bulimia, self-esteem, attitudes towards body.

Category of the paper: Research paper.

1. Introduction

Nowadays, care for the health and the image of one's body has become the objective of almost every modern woman. Due to contemporary canons of “beauty”, many young women take actions related to the desire to achieve a profile consistent with those canons even more frequently (Brytek-Materna, 2012). A slim female figure has become a symbol of beauty and sexual attractiveness as well as proof of having a strong will, self-control, determination and sense of fashion, even at the cost of contradicting one's biological rights and needs. The number of people showing symptoms of eating disorders such as *anorexia nervosa* or bulimia is increasing. Another disorder that bases most often on the mechanisms of failure of coping with stress or a situation that can be assessed as difficult is psychogenic overeating (Izydorczyk, 2018). This, in turn, may result in obesity, which is dangerous to health. Questions could be asked about how young Polish women perceive their bodies today? Are they at risk of having eating disorders? Appearance, perception of one's own body, and restrictive behavior have become the subject of more and more frequently undertaken empirical research as well as theoretical studies conducted to establish the correlation of various factors underlying the etiology of disturbances in eating habits.

2. Body image

Body image is a complex and multidimensional concept. The definition of body image, in general, is "an individual image of one's own body stored in memory, consisting of an assessment of one's attractiveness and its impact on body perception, body emotions, and body behavior". Body image is a conscious, mental representation of one's own body — unlike the body schema, which is a neural structure created on the basis of experiences from proprioceptors, the vestibular system, and the sense of touch, which is of unconscious character. Body image is extremely important for psychophysical development, which is connected with eating habits as well as physical, social, and sexual activity. The main factors causing the formation, and the possibility of modifying the body image are biological factors, such as sex, age, body weight, maturation, aging of the organism, and socio-cultural or personality factors.

In psychology, the image of the body is presented as: body schema, body self, body-concept. According to Rabe-Jabłońska and Dunajska (1997), we distinguish the following body image composition:

- perception and interpretation of stimuli coming from inside the body,
- individual visual and haptic interpretations,
- the degree of disparity and convergence between the ideal image and objective conditions.

According to Bielefeld (2005), the sensations that a person experiences during their entire social and individual development are experiences of their own body. These experiences are cognitive and emotional, and they are either conscious or unconscious. In the situation of experiencing corporeality, it is necessary to distinguish two components: body scheme, namely "neurophysiological image of the perceptual-cognitive activity of an individual related to their own body", and body image, which is the psychological-phenomenological area of experiencing corporeality. Body image includes the following aspects:

- body consciousness or body awareness – the mental representation of one's body or its part, which is available to conscious perception,
- body boundary – the experience of body boundaries, namely, a clear separation of the body from the outside world,
- body cathexis – all the attitudes of a person towards their own body.

As part of the body image assessment, the following effects may occur:

- disturbance of body percept,
- inaccurate ideas about the appearance of the body (body concept).

It can be considered that body image is an important part of the self-image, and therefore has a significant impact on the behavior of a person towards themselves and others. Importantly, it has a significant impact on how they react to both internal and external stimuli that are related to the psychophysical functioning of the body. In a situation in which a given individual is satisfied, feels relative freedom in interpersonal relations, experiences positive thoughts, and emotions while perceiving their body, and their external appearance in a correct manner, which does not deviate from the norm, one can talk about the correct state of affairs. However, everything becomes more complicated in a situation in which a given individual perceives their body in a manner incompatible with reality, does not feel any positive thoughts and emotions about themselves, and in addition, the attitude towards their appearance is negative. In such a situation a high probability of occurrence of various emotional and mental disorders appears (Izydorczyk, 2019).

3. Attitude towards body

The basic assumptions of cognitive concepts, regarding the shaping of attitudes, confirm the importance of distortions of cognitive patterns about the realistic body image. The value of

the posture-body object is significantly influenced by a negative assessment and a significant disparity between the realistic body image and the idealized one (Brytek-Materna, 2011). Due to the fact that the realistic body image is inconsistent with the accepted standards of striving for a slim figure, it is treated as worse, and inappropriate. The multifaceted nature of the subjective assessment of body image in cognitive theories indicates the influence of cognitive patterns on the attitude towards one's own body, and also influences the appearing emotions in this matter. Cognitive factors influence the nature of the attitude towards the body and also emphasize the importance of thought patterns, which regard body image in a positive or negative way.

The attitude towards food can be presented as a multifactorial composition regulating the cognitive (analytical), emotional (affective), socio-cultural (interpersonal), and behavioral (behavior) dimensions that a person displays in relation to eating. Attitudes towards food can be both positive and negative. A positive attitude is characterized by healthy eating habits and deriving pleasure from eating, while a negative attitude presents a lack of control over food consumption, which causes malnutrition or an excess of food eaten. Additionally, no enjoyment of eating may be felt. Such an attitude can lead to the impairment of the organism.

3.1. Cognitive aspects of attitudes

The cognitive aspect of attitudes is characterized by the significant importance of eating behavior. An important factor for a person is the role of food in their everyday life. According to Niewiadomska (2005), consumption of food has the following functions of eating:

- biological – food intake in order to maintain the organism's vital processes,
- psychological – meeting mental needs,
- worldview – appropriate meals are selected basing on views and religion,
- social – time spent eating together affects interpersonal relationships,
- cultural – obtaining food as a sign of progress in the development of civilization,
- economical – selection of products for sale.

3.2. Emotional aspects of attitudes

According to Research by Jacobi (2005) emotional body dissatisfaction and the cognitive aspect are the most important factors responsible for the development of eating disorders in adolescents. The basic feelings that occur in attitudes towards the body are the power of emotional acceptance, which is represented by satisfaction or dissatisfaction with one's appearance. Particular attention should be paid to the fact that emotions play an important role in regulating eating behavior. Nowadays, the so-called emotional hunger, which occurs in stressful situations, when a person cannot cope with the emotions they experience, appears frequently. Emotional hunger can be defined as an act of release of one's emotions by eating excessive amounts of food. It is a common phenomenon because food is easily available and

relieves tension very quickly. Unfortunately, it may lead to a situation in which eating is a distraction from stimuli that cause unpleasant and stressful situations (Ogińska-Bulik, 2004).

It should be assumed that the emotional and cognitive attitude towards one's own body is interdependent. In an eating disorder, it takes the form of self-destructive behavior.

4. Health and anti-health behaviour

In order to define behaviors aimed towards health, two basic concepts of behavior should be distinguished (Heszen, 2007). The first are health (pro-health) behaviors that serve to support health, prevent diseases, and help one recover. The second behavior, namely anti-health, contributes to the emergence of health disorders and negative emotional, physical, and mental influences. The awareness of one's own health behaviors is essential from the perspective of applying the mechanisms of social influence. The level of an individual's awareness influences the development of pro-health and anti-health behaviors. Health behaviors towards the body that are analyzed from a psychological point of view are the result of a multifaceted process of external reaction toward the body or lack of the reaction thereof. It is worth noting that the matter considers mainly patterns of thinking and emotional response to food. An important factor is what functions the consumed food performs – biological, psychological, or social. The media are of great importance in shaping health behaviors, which, thanks to the intensive development of technology, became one of the main sources of information about health. Social campaigns on health and disease distinguish pro-health behaviors, as well as those that may have a negative impact on health, e.g. Pro ana forum (Izydoreczyk, 2018).

5. Purpose and subject of research

The purpose of the research was an attempt to characterize the attitudes adopted by young women towards their own bodies. Different persons, in order to raise their own attractiveness, undertake various behaviors – some of those are not correct. Due to the occasionally occurring disparity between social expectation and actual appearance, this may result in a negative perception of body image and may lead to engaging in such behavior that will have negative effects on the mental and physical health of the respondents.

The main aim of the research is to identify if and how young women perceive their appearance, and which of their attitudes and behaviors could become a risk factor for eating disorders.

The main variable verified was **the attitude towards the body** – it is a belief, as well as emotions, related to the functioning of the body and its appearance. Body attitudes develop on the basis of one's own experiences, cultural patterns, and external knowledge. An important aspect is that it is the result of a disparity between one's own realistic and ideal body image. It affects the overall functioning of a person (self-esteem, relationships with others, lifestyle, eating behavior, decisions making).

The indicators of the variable are:

Behaviors towards the body – dependent primarily on the perception of one's body. There are two types of behaviors presented by Heszen (2005), namely health and anti-health behaviors. Health behaviors support health, physical activity, and an overall healthy lifestyle. They do not contribute to negative interactions in the emotional, physical and mental spectra. On the other hand, anti-health behaviors lead to health disorders and have a negative impact on all spectra.

Appearance Enhancement Methods – relate to the behavioral aspect of body image. In the questionnaires used, different appearance enhancing behaviors and general accepted socio-cultural norms regarding physical appearance are taken into account.

Satisfaction with one's appearance – it can be explained by Higgins' self-discrepancy theory, which is based on the structure of the Self responsible for individual experiences and personal backgrounds. The objective state experienced by the person is an important factor in satisfaction with the body. The objective state is the real Self, the ideal Self, the ought Self. The difference between the realistic and the idealistic body image has a significant impact on whether or not one is satisfied with one's own appearance. In this case, there may be different emotions, both positive and negative.

Self-esteem – is "evaluation of the concept of Self, namely a generalized, relatively permanent evaluation of oneself as a person". Self-esteem concerns mental, and physical characteristics, and consists of several important elements: physical attractiveness, sense of humor, interpersonal skills, etc. The concept of self-esteem should be understood as an image of ourselves, i.e. how we see ourselves, and how others see and evaluate us. Depending on the level of self-esteem is the level of satisfaction with one's appearance.

The research also takes into account independent intermediary variables, such as age, current weight, and place of residence.

The following research tools were used in the analysis:

1. Body Image Questionnaire (KWCO) by A. Głębocka.
2. The Scale for Using Appearance Enhancement Methods by A. Głębocka.
3. The Scale of Satisfaction with Individual Body Parts and Body Parameters by A. Głębocka.
4. MSEI – Multidimensional Self-Esteem Inventory by E.J. O'Brien and S. Epstein.
5. General Survey on Sociodemographic and Controlled Data.

The general questionnaire consists of 42 closed and 2 open questions. The questions concern, inter alia, age, weight, place of residence, perception by peers-acquaintances. In addition, the respondents had to answer questions about their health, such as "Do you suffer from any medical condition?", "Do you have an active lifestyle?".

6. Research group and the course of the research

Young women aged 19-25 are included in the research. Selection for the group is deliberate. It is assumed that the age factor would differentiate attitudes towards one's own body. Young people are sensitive to their appearance and the remarks directed at them. What is also important, the exclusion condition from the research was a disease related to eating disorders, such as *anorexia nervosa*, bulimia, or psychogenic overeating, diagnosed in the past. The research was conducted in the period from May 1, 2020, to November 30, 2020, in the Silesian Voivodeship. Participation in the research was voluntary and anonymous.

7. Analysis and interpretation of the obtained results

117 women aged 19-23 participated in the survey. The average age in the study group is 19.60 years. The average bodyweight of the respondents is 61.70 kg. The lightest of the participants in the study weigh 40 kg and the heaviest 115 kg.

The majority of the sample (56.41%) are women living in cities with 50,000 to 200,000 inhabitants. The smallest subgroup is made up of the respondents living in the countryside (8.55%).

Most of the respondents assess their health as good (76.36% of the answers are "rather yes" and 7.69% of the answers "definitely yes"). In the questions about leading a healthy, and active lifestyle – 44.44% of the answers are "rather yes" and 43.59% of the answers "rather not". Most of the respondents declared that their BMI is within the norm, they are satisfied with their bodies, and that they pay attention to how much they weigh. When asked whether they often think about their appearance - 33.33% of them said "definitely not", and 23.93% said "definitely yes".

In addition, more than half of the respondents (52.99%) admit that they had lost weight, and 23.08% of them declare that they were trying to lose weight at the time of the study. However, no eating disorders were found in any of the respondents in the past or present. Most of the respondents (61.54%) also replied that in their own environment they met with the desire to achieve the ideal of a slim figure propagated by the media. The next two questions are

related to proper nutrition. Only 31.62% of the surveyed women admit that they eat regularly at specified times of the day. On the other hand, a much higher percentage – 67.52 – omits one of the meals every day, and most often it is breakfast. The vast majority of them (76.07%) consume from 3 to 4 meals. Much fewer respondents eat once or twice a day (5.98%) or more than 7 times a day (4.27%). The respondents are characterized by a high level of knowledge about eating disorders, their specificity, symptoms, and causes.

The distributions of the respondents' answers to questions about the behavior of their peers-acquaintances towards them, were determined by the respondents on a 5-point scale of the frequency of occurrence of each of the above-mentioned situations. The most common situations are related to the positive attitude of peers-acquaintances to the respondents. The respondents declare that their peers accept their appearance (41.88% of the answers are “very often” and 34.19% of the answers are “often”). Responses showing a negative attitude of peers-acquaintances towards the respondents do not exceed 10% of indications.

Table 1.

The value of the index of acceptance by peers-acquaintances – descriptive statistics

| Variable | Mean | Minimum | Maximum | Standard deviation |
|--|------|---------|---------|--------------------|
| peers-acquaintances acceptance index (1-5 pts) | 3,87 | 1,00 | 4,67 | 0,60 |

Source: own research, n = 117.

The results presented in Table 1 refer to the value of the acceptance index in the surveyed group of women. The average value of the index is 3.87 points, so it is definitely above the middle value of the adopted measurement scale. The person with the lowest level of acceptance gathered the lowest possible number of points – 1. The respondent with the greatest sense of acceptance among peers-acquaintances reached the value of 4.67 points. The remaining results of the conducted research are the results of standardized questionnaires that are used to measure several phenomena important from the point of view of the planned research. The first of these thematic areas is the level of the respondents' self-esteem, which was measured with the use of the Multidimensional Self-Esteem Inventory. Its results consist of 8 detailed scales for subsequent aspects of self-assessment and a general scale. The results of each of these scales could be in the range of 10-50 points, so it is possible to compare them. The average score on the general self-esteem scale in the study group equals 28.38 points. Thus, it is the lowest of all measurement scales. Moreover, the standard deviation amounting to 7.52 points in its case proves that the results of this scale are the most diversified. The respondents have the highest self-esteem in the case of moral self-acceptance (average of 35.32 points). Among the detailed scales, the respondents rate their physical attractiveness the lowest (average of 28.95 points). Detailed data are presented in Table 2.

Table 2.*The results of the Multidimensional Self-Esteem Inventory questionnaire – descriptive statistics*

| Scale (10-50 pts) | Mean | Minimum | Maximum | Standard deviation |
|----------------------------|--------------|--------------|--------------|--------------------|
| general self-esteem | 28,38 | 10,00 | 45,00 | 7,52 |
| moral self-acceptance | 35,32 | 18,00 | 48,00 | 7,03 |
| competences | 32,74 | 14,00 | 45,00 | 6,18 |
| being loved | 32,36 | 13,00 | 48,00 | 7,18 |
| leadership abilities | 32,07 | 14,00 | 48,00 | 6,28 |
| popularity | 31,34 | 14,00 | 43,00 | 5,34 |
| self-control | 30,06 | 13,00 | 43,00 | 5,84 |
| vitality | 29,25 | 11,00 | 48,00 | 7,20 |
| physical attractiveness | 28,95 | 12,00 | 46,00 | 7,34 |

Source: own research, n = 117.

Another standardized tool used in this study was the Body Image Questionnaire (KWCO). Results are obtained in 4 scales:

- On the cognition-emotions scale, the attitude of the respondents to their own bodies was noted. The higher the scores on this scale are, the more negatively the respondents assess their own bodies.
- The behavior scale is related to the intensity of activity undertaken by the respondents. The higher the results of this scale are, the greater is the physical activity undertaken by the examined women.
- The results gathered on the scale of environmental criticism show the intensity of negative messages from the environment encountered by the respondents. The higher the scores on this scale, the greater the criticism.
- The pretty-ugly stereotype scale is related to the degree of belief of female respondents that pretty people are good at the same time and have happier lives. The higher the scores on this scale are, the greater is the agreement with this view. The data are presented in Table 3.

Table 3.*The results of the Body Image Questionnaire (KWCO) – descriptive statistics*

| Scale | Mean | Minimum | Maximum | Standard deviation |
|------------------------------------|-------|---------|---------|--------------------|
| cognition-emotions (16-80 pts) | 43,72 | 17,00 | 76,00 | 15,70 |
| behavior (5-25 pts) | 14,56 | 5,00 | 25,00 | 4,72 |
| environmental criticism (6-30 pts) | 13,24 | 6,00 | 27,00 | 4,79 |
| pretty-ugly stereotype (13-65 pts) | 43,82 | 16,00 | 65,00 | 9,84 |

Source: own research, n = 117.

The respondents in The Scale for Using Appearance Enhancement Methods questionnaire refer to the methods of correcting one's appearance. In this case, the highest value on a 9-point scale represents the most frequent and regular use of a given method. The most commonly used methods of improving the appearance of the body in the study group turn out to be: new clothes (6.75 points), and physical exercise (5.56 points). Subsequently, the respondents use appropriate diets (4.15 points), cosmetic treatments (3.72 points), and slimming treatments (2.66 points). Plastic surgery is the least frequently used method of improving the appearance of the respondents (1.18 points). In their case, the significantly lowest standard deviation value (0.66 points) is achieved, which proves the high compliance of the respondents when providing answers in this area.

To verify the influence of peers-acquaintances on the body image of the surveyed women, the developed peers-acquaintances acceptance index was compared with the results of the Body Image Questionnaire (KWCO). Since the compared variables are recorded on quantitative measurement steps (exact numerical values), the results of Pearson's linear correlation coefficients (r) are used to verify the potential relationships between them. The data in Table 4 indicate that 3 out of 4 scales of the Body Image Questionnaire are not statistically ($p > 0.05$) dependent on the level of acceptance of peers-acquaintances in a significant way. However, such a correlation was proved in the case of the scale of environmental criticism ($p < 0.05$). If the level of acceptance by peers-acquaintances is low, it means that such criticism is significant. The value of the calculated correlation coefficient shows in this case a statistically high strength of the relationship.

Table 4.

The value of the index of acceptance by peers-acquaintances and the results the Body Image Questionnaire (KWCO)

| KWCO scales | the index of acceptance by peers-acquaintances (1-5 pts) |
|------------------------------------|---|
| cognition-emotions (16-80 pts) | $r = -0,1425, p = 0,125$ |
| behavior (5-25 pts) | $r = -0,1369, p = 0,141$ |
| environmental criticism (6-30 pts) | $r = -0,5302, p = 0,000$ |
| pretty-ugly stereotype (13-65 pts) | $r = 0,0609, p = 0,514$ |

Source: own research, $n = 117$.

Age has not been proven to influence the perception of one's own body. This variable ($p > 0.05$) does not correlate with the result of the cognition-emotion scale (i.e. the scale corresponding to the image of one's own body) and the behavior scale. In the remaining two cases, statistically significant ($p < 0.05$) correlations between the variables were found.

Table 5.*The value of the index of acceptance by peers-acquaintances and the age of the respondents*

| KWCO scales | age (in years) |
|------------------------------------|--|
| cognition-emotions (16-80 pts) | $r = 0,0546, p = 0,559$ |
| behavior (5-25 pts) | $r = -0,0035, p = 0,970$ |
| environmental criticism (6-30 pts) | $r = -0,2474, p = 0,007$ |
| pretty-ugly stereotype (13-65 pts) | $r = 0,2205, p = 0,017$ |

Source: own research, n = 117.

The study shows that the criticism from the environment decreases with the age of the respondents. This correlation is statistically weak in impact strength. A statistically insignificant correlation is also confirmed in the case of the age of the respondents and their results on the pretty-ugly stereotype scale. The compliance with the stereotype that pretty people are perceived more favorably in society increases with the age of the surveyed women.

The relationship between the self-esteem of the respondents and the way they perceive their own body is verified by the correlation of the results of the Multidimensional Self-Esteem Inventory questionnaire with the results of the Scale of Satisfaction with Individual Body Parts and Body Parameters. In most of the analyzed potential pairs of variables, the results of Pearson's linear correlation coefficients (r) confirm significant relationships ($p < 0.05$). In each of these cases, the increase in the level of self-esteem is associated with an increase in the assessment of a given parameter/part of the body. In one case, a statistically high correlation is noted: with the increase in the assessment of one's physical attractiveness, the acceptance of the assessment of the weight of the respondents also increases. The remaining of the confirmed correlations have insignificant or average strength. All body parameters/parts were related to the following scales: general self-esteem, competence, popularity, and physical attractiveness. The described results clearly show that the self-esteem of the surveyed women is statistically related to their perception of their bodies.

Verification of the assumption that negative perception of individual body parts has a significant impact on decisions about the use of methods of improving the appearance was made by analyzing the results of The Scale for Using Appearance Enhancement Methods and The Scale of Satisfaction with Individual Body Parts and Body Parameters. The data presented in Table 6 show that the use of only one of the methods of appearance enhancement (plastic surgery) is not statistically dependent on the assessment of one's own body ($p > 0.05$). On the other hand, all statistically significant correlations ($p < 0.05$) have an insignificant or average impact strength. Physical exercise is associated with the assessment of the greatest number of parameters/body parts (7). The frequency of their use increases with the increase of positive assessment of the face, arms, breasts/torso, waist/waist band, thighs, hips, and legs. Conversely, the frequency of cosmetic treatments increases with negative evaluations of the face, breasts/torso, waist/waist band, hips, and legs. The remaining methods of correcting the appearance are correlated with two assessments of body parts:

- the frequency of using the diet increases with the negative assessment of the face and height,
- the frequency of slimming treatments decreases with a positive assessment of thighs and weight,
- the frequency of buying new clothes increases with positive assessments of face and height.

Table 6.

The results of The Scale for Using Appearance Enhancement Methods and The Scale of Satisfaction with Individual Body Parts and Body Parameters

| Body parts/ parameters (1-9 pts) | Methods (1-9 pts) | | | | | |
|----------------------------------|------------------------------------|-------------------------------------|------------------------------------|------------------------------------|------------------------------------|-----------------------|
| | appropriate diet | slimming treatments | physical exercises | cosmetic treatments | new clothes | plastic surgeries |
| face | r=0,2043, p=0,027 | r=0,0539, p=0,564 | r=0,2616, p=0,004 | r=0,1936, p=0,036 | r=0,2365, p=0,010 | r=0,0459, p=0,623 |
| arms | r=0,0168, p=0,858 | r=-0,0196, p=0,834 | r=0,2047, p=0,027 | r=0,1136, p=0,223 | r=0,1459, p=0,117 | r=-0,0040, p=0,966 |
| breasts/ torso | r=0,1162, p=0,212 | r=-0,0599, p=0,521 | r=0,2163, p=0,019 | r=0,2098, p=0,023 | r=0,1740, p=0,061 | r=0,0082, p=0,930 |
| waist/ waist band | r=0,1749, p=0,059 | r=0,0269, p=0,773 | r=0,3139, p=0,001 | r=0,3035, p=0,001 | r=0,1735, p=0,061 | r=0,1415, p=0,128 |
| abdomen | r=0,0465, p=0,619 | r=-0,1075, p=0,249 | r=0,1267, p=0,173 | r=0,1150, p=0,217 | r=0,0588, p=0,529 | r=0,1392, p=0,128 |
| thighs | r=0,0129, p=0,890 | r=-0,1956, p=0,035 | r=0,2234, p=0,015 | r=0,1038, p=0,266 | r=-0,0202, p=0,829 | r=0,1342, p=0,149 |
| hips | r=0,0722, p=0,439 | r=-0,0588, p=0,529 | r=0,2368, p=0,010 | r=0,2642, p=0,004 | r=0,1545, p=0,096 | r=0,0786, p=0,400 |
| legs | r=0,1241, p=0,183 | r=-0,1305, p=0,161 | r=0,3071, p=0,001 | r=0,2524, p=0,006 | r=0,1390, p=0,135 | r=0,1195, p=0,199 |
| height | r=0,2642, p=0,004 | r=0,1123, p=0,228 | r=0,1699, p=0,067 | r=0,1726, p=0,063 | r=0,2468, p=0,007 | r=0,0583, p=0,532 |
| weight | r=0,0862, p=0,356 | r=-0,1841, p=0,047 | r=0,0949, p=0,309 | r=0,0677, p=0,468 | r=0,0045, p=0,962 | r=0,1067, p=0,252 |

Source: own research, n = 117.

8. Discussion

The group of surveyed young women varies in terms of age and place of residence. The only common feature is the gender of the respondents. Most of the respondents assess their health as good and are characterized by moderate physical activity. It has been shown that 76.07% of the respondents eat 3-4 meals a day, and almost half of the respondents believe that

their knowledge of eating disorders is sufficient. This also may be seen in the answers concerning the causes of eating disorders as well as the knowledge of anorexia, bulimia, and obesity. Almost all respondents indicate the same causes of eating disorders, including such as pressure of the environment, mental problems, or dissatisfaction with the body. The examined group does not indicate the lack of acceptance by the communities of peers-acquaintances.

In the conducted research, it is demonstrated, using the Multidimensional Self-Esteem Inventory Questionnaire, that the surveyed group of female respondents is characterized by low overall self-esteem. Self-esteem is a major factor in personality and has an impact on the self-perception of the body. A person with low self-esteem very often experiences negative emotions. Low self-esteem is also a predisposing factor to disorders and emotional problems. The use of the Body Image Questionnaire by Alicja Głębocka and The Scale of Satisfaction with Individual Body Parts and Body Parameters by the same author shows that there is a slightly reduced assessment of one's own body mainly in the areas of thighs and abdomen. The Scale for Using Appearance Enhancement Methods by Alicja Głębocka shows that the most frequently used methods of improving appearance are new clothes and physical exercises.

The obtained results do not confirm that the lack of physical activity and a healthy lifestyle influences the occurrence of eating disorders. When trying to explain the obtained results, one should pay attention to the awareness of one's health behaviors, which, according to Heszen, may have a negative impact on the emotional, physical and mental spheres. As indicated in the literature on the subject, the lower the awareness, the greater the risk of disorders. Eating disorders are affected not only by a lack of physical activity, or a healthy lifestyle. There are many factors, i.e. biological, occurring in the physical and social environment, such as socioeconomic status, personality traits, or individual resources that affect the occurrence of eating disorders. The conducted study confirms that the influence of peers-acquaintances and the need to be accepted have a significant impact on experiencing eating disorders. Young women who do not have social support are much more susceptible to external factors, through which they may engage in restrictive behavior in order to become accepted and liked by their peers-acquaintances. Criticism from peers-acquaintances confirms the belief in dissatisfaction with one's own body, and thus, behaviors that adversely affect mental and physical health are undertaken. A 2002 study by Eric Stice and Kathryn Whitenton confirms that there is a correlation between low peer support and heavy binge eating by young women. This confirms that social support is very important and its deficit may increase the chances of developing eating disorders.

Young women treat their figure as an object of comparison with other people, especially with those from the media. After achieving identity, they evaluate their external appearance much better, because they accept it to a large extent. Thus, with age, the level of satisfaction with one's body increases, and the frequency of monitoring one's body, for example in terms of

weight control, decreases. Taking actions and self-acceptance significantly affect one's own well-being.

The obtained results confirm that low self-esteem has a significant influence on the negative perception of one's body. Self-esteem is one of the most important mental structures that make it easier for a person to recognize themselves. Particular attention should be paid to the fact that self-esteem is influenced mainly by comparing oneself with the established ideal. A component of global self-esteem is positive self-esteem of one's appearance, which is a major factor in mental health, eating behavior, and satisfaction. Satisfaction with one's appearance or lack of satisfaction is largely influenced by emotional factors, which, according to Alicja Głębocka, are based on body size or weight, while cognitive factors are based on beliefs about one's appearance. Apart from cognitive and emotional factors, socio-cultural determinants have a negative impact on the perception of one's body. An important factor in the matter of self-esteem is the opinion of other people and the presence of modern canons of beauty. In most people dissatisfaction with the body and its negative assessment result from social anxiety, which is associated with restrictive attitudes towards food and body weight.

The obtained results also allow us to assume that negative perception of individual parts of the body has an impact on decisions about the use of appearance enhancement methods. These results are consistent with the research carried out by A. Głębocka and show that the most frequently noted appearance enhancement methods by young women were physical exercises, as well as cosmetic procedures, which depend on the acceptance of individual parts of their body. Unfortunately, due to the negative perception of their own body, many young women learn from various online forums, where the information provided is not always true and, above all, healthy for the body (e.g. Pro ana forum).

Undoubtedly, it would be important to verify the obtained results by carrying out the study in other age groups of women, who represent different professions.

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AN ENTERPRISE IN THE GLOBAL ECONOMY. MODERN MANAGEMENT METHODS VS ECONOMIC CRISIS AND PANDEMIC

Jerzy WĄCHOL

AGH University of Science and Technology, Kraków; jwachol@zarz.agh.edu.pl, ORCID: 0000-0003-0296-0585

Purpose: The objective of the study is presentation of the conditions of functioning of enterprises on the global market, use of modern management methods, employees' preferences in the period of the pandemic and crisis in the existing surroundings. The aim of the study is to present a changing global environment for businesses, to use modern elements of management, IT and telecommunications as necessary elements in the face of the pandemic and global crisis, to sustain the functioning of businesses, organizations, economies and states.

Design/methodology/approach: Based on the collected data, observations and own studies, conclusions were drawn and proposals presented with regard to counteracting the pandemic as well as opening and development of businesses and economies. Based on the statistical data, own surveys and literature, conclusions were drawn with regard to trends in organization and application of modern management concepts and enterprise management forms in the global economy in the conditions of the pandemic and economic crisis. The study presents also the problems of the contemporary global economy in sustainable development.

Findings: The study analyses the functioning of enterprises in the 21st century, taking into consideration further surroundings as well as technological, economic and social changes, including economic crises and the current pandemic. It presents and discusses socio-economic data and trends in the EU where, due to the epidemic, internal differences, economic and political issues, too slow development, lack of effective border protection. The above serves as a background for presentation of management elements and trends in organization of the future. Currently, marketing, finance, profit, strategies, HR, innovativeness, modern management methods, forms of organization, etc. play an important role in enterprises. On the other hand, IT elements already have an important and increasing position, especially in the face of the pandemic, remote work and global crisis. As shown by the survey-based studies carried out at the beginning of 2020, employees value health, work, family, economic, social and even ecological elements. These are, therefore, the survival-related needs according to the Maslow's hierarchy of needs, especially in the face of the pandemic, remote work and global crisis. Even though economies are opening today, the situation related to the pandemic worldwide is still uncertain. Hope is pinned, particularly to the countries of the West, upon the vaccines, medicines, modern management methods and new technologies

Keywords: Economic crisis, enterprise surroundings, pandemic, modern management methods trends in organization, sustainable development.

1. Introduction

Enterprises and citizens must quickly adapt to the developments in the surroundings in order to earn and survive (Borowiecki, 2010). These include not only economic, legal, political, technological, IT aspects or management methods (Szymańska, 2015), but also aspects related to the sociocultural surroundings, mixing of cultures and the natural environment (Pollok, 2015).

In the circumstances of the current SARS-CoV-2 pandemic, mutating and increasingly dangerous viruses, the surroundings of the enterprises are becoming increasingly unstable and uncertain. In addition to the fast changes in the global surroundings and political, social and economic issues in the European Union, we are now also facing a pandemic. It is also important to adapt to the pandemic-related restrictions. These are created at a global level as well as in the European Union and individual diversified nation states. The challenges for enterprises are definitely substantial. Potential issues include further waves of the pandemic, terrorism, states of emergency, military conflicts, which may disrupt economic stability, so important for enterprises and their strategic plans.

Especially in the times of the epidemic, it turned out that IT and telecommunication can be used very often and in many cases for remote work, be it in enterprises or organisations, e.g. by government or local government units, or in education. Networks, local servers or software has failed multiple times due to excessive numbers of active users and complicated IT processes. Hackers' attacks have also been significant in these terms. In these times, the things that matter are to survive, live, be able to work and earn money. Some of strategic resources, products, such as vaccines or medications, cannot be perceived only economic categories and negotiated low costs, because their quantities may be simply insufficient for survival and opening of the economy and enterprises.

Therefore, in addition to the profit targets and maximisation of the enterprise value, the organisation's targets must also include elements related to survival, security of strategic resources needed to survive, producing them for internal purposes, without reliance on import. Important elements include also process management (Nadolna, 2014), aid programmes provided by the state, especially those for important strategic economic sectors and companies as well as benefits helping the population survive.

The objective of the study is presentation of the conditions of functioning of enterprises on the global market, use of modern management methods, employees' preferences in the period of the pandemic and crisis in the existing surroundings. Based on the collected data, observations and own surveys and studies, conclusions were drawn and proposals presented with regard to counteracting the pandemic as well as opening and development of businesses and economies.

2. Economic crisis and pandemic vs enterprise

The fight with the pandemic frequently differs significantly country by country. In the conditions of autocratic systems that are very good at controlling the state, society and economy as well as private companies and corporates, as in China, a lot has already been accomplished. The great economy of China recorded a positive GDP growth of 1.9% for 2020 and, as for now, there are practically and officially no infections. The effective method of disciplining the Chinese state in the fight with the pandemic is not, however, as it seems, applicable in the countries of the democratic West where the GDP dynamics for 2020 is negative. Among bigger or average countries around the world, only Egypt, with its busy Suez canal, has positive GDP dynamics of 2% for 2020.

The economic crisis combined with the current epidemic is a specific opportunity for verification and application of modern management concepts (Brilman, 2002), crisis management methods as well as IT and telecommunication multimedia means (Kasprzak, 2003). Their implementation is indispensable, on the one hand, to stop viruses and bacteria from spreading and, on the other, to slow down the economic and social crisis. IT systems enable functioning of the economy and state, and the IT sector is growing strong. The employees of this industry are in high demand, as opposed to many other sectors of the economy, recording losses and redundancies, e.g. in tourism or HoReCa.

The epidemic, spreading like wildfire, requires extinguishing the outbreaks almost completely in order to control it, and only then the restrictions may be lifted. If, however, the restrictions are lifted after each and every temporary decline in infections, it is like adding fuel to the epidemic wildfire for it to keep burning. Furthermore, the longer this pandemic lasts, the greater the number of mutated and more dangerous viruses and the harder to quickly adapt the new vaccines or medications.

The pandemic may be long gone, but the economic crisis will continue, not only due to the SARS-CoV-2 coronavirus or mutations, but also due to accumulation of economic and social issues from previous years, starting from the recent economic crises that ensued around the world. Forecasts, just as data for 2020, are pessimistic, even tragic for the global economy which, as is expected, will decline in terms of GDP by 3% or more. Many countries will fall into recession and high unemployment, as expected, *inter alia*, by IMF (International Monetary Fund) As results from the presented forecasts, the world is at risk of global recession on a huge scale, similar to the crisis from 1929-1933, which ended with world war II. There is, however, hope in the form of vaccines, if they are effective and can be quickly improved to match the new coronavirus mutations. This would allow to open the economies at a larger, normal scale.

After the 2008 and previous crises, the global economy has not really fully recovered. The remedial steps taken back then, such as lower interest rates and increased money supply, money printing, increasing indebtedness, have only postponed the global crisis that hit in 2020

and 2021 with even greater strength and range. The outbreak of the epidemic in 2020 aggravated this crisis even more. It also gives rise to an interesting situation in many countries as it is mostly the pandemic that is blamed for the economic crisis, and not the managements of companies, corporations or the government. Meanwhile, the global economic crisis has been piling up for many years and would most probably ensue even without the coronavirus pandemic.

Most economically important countries of the world, having modern technologies at their disposal, including IT, may record negative GDP dynamics and an increase in unemployment according to these forecasts. This, however, does not apply to China which, after a significant economic downturn, from ca. 6.1% in 2019, recorded positive GDP dynamics of +1.9% in 2020, mostly in line with the IMF's forecasts. The second wave of the pandemic that hit in autumn 2020 did not really affect the countries of the Far East, such as China, Japan, South Korea, etc. that much. These countries, used to various epidemics they have been facing for many years, are better adapted to the current situation and can counter the coronavirus pandemic easier. Nevertheless, the third wave of the pandemic is approaching to hit in 2021, along with new, even more dangerous mutations of this virus.

In the case of advanced, expanding globalisation processes (Griffin, 2017), the area of the global surroundings is overlapping the area of further surroundings of the enterprise in the given country, including Poland. This obviously gives rise to specific issues in the sociocultural, environmental, political and legal, macroeconomic and technological aspects. These may regard the natural environment (Kryński, 2013) or an epidemic, in the given country, region or in the world. The situation may offer new opportunities and pose new threats for enterprises, both in our country and on the global market. Situation of some enterprises may deteriorate, other may develop. Economic problems in a variable and unspecified environment of enterprises on the global market are highly complex. This does not have to mean complete replacement of the market mechanism with governmental or parliamentary directives, but rather a completely new interventionism of the state in the times of the pandemic and crisis.

Table 1 presents the GDP dynamics along with unemployment data for 2020 for selected countries, i.e. economically significant countries and those in close contact with Poland. The GDP dynamics forecasts were prepared by IMF in May 2020. Whereas the real data for the GDP dynamics in 2020 are presented in the column beside the forecasts.

The IMF's forecast for 2020 at the GDP dynamics have been mostly right in terms of the tendencies, with some exceptions where the figures are indeed usually negative, but slightly different. This does not change the fact that the world in 2020 was in an economic crisis, and only China recorded a positive real GDP value (+1.9) in this set. Further GDP forecasts by IMF for 2021 are optimistic and usually positive, but whether the pandemic will end remains an unknown. Further coronavirus mutations and waves of the pandemic are possible. The situation in India is concerning due to the pandemic and GDP dynamics for 2020 of -10.3%, while the IMF's forecasts for India showed +1.9% and, thus, were wrong.

Table 1.*GDP dynamics in 2020 and unemployment in selected countries of the world*

| Country/ Region | Real GDP dynamics in 2020 | IMF forecasts of GDP dynamics for 2020 | | Most likely GDP dynamics forecasts acc. to IMF in 2020 | Unemployment/ period | |
|--------------------|---------------------------------|--|------|--|-------------------------|---------|
| | ↓ % | from % | to % | % | % | period |
| China | +1,9 | 0 | +5 | +1,2 | 5,9 | 04.2020 |
| Lithuania | -1,8 | -10 | -5 | -8,1 | 11,2 | 05.2020 |
| South Korea | -1,9 | 0 | -5 | -1,2 | 3,8 | 05.2020 |
| Norway | -2,8 | -10 | -5 | -6,3 | 3,5 | 03.2020 |
| Poland | -3,6 | -5 | 0 | -4,6 | 5,4 | 04.2020 |
| Russia | -4,1 | -10 | -5 | -5,5 | 4,7 | 04.2020 |
| Australia | -4,2 | -10 | -5 | -6,7 | 6,2 | 04.2020 |
| USA | -4,3 | -10 | -5 | -5,9 | 14,7 | 05.2020 |
| Sweden | -4,7 | -10 | -5 | -6,8 | 7,1 | 04.2020 |
| Japan | -5,3 | -10 | -5 | -5,2 | 2,5 | 04.2020 |
| The Netherlands | -5,4 | -10 | -5 | -7,2 | 2,9 | 04.2020 |
| Saudi Arabia | -5,4 | 0 | -5 | -2,3 | 5,7 | 01.2020 |
| Brazil | -5,8 | -10 | -5 | -5,3 | 12,2 | 04.2020 |
| Turkey | -5,8 | -5 | 0 | -5,0 | 13,8 | 02.2020 |
| Germany | -6,0 | -10 | -5 | -7,0 | 3,5 | 04.2020 |
| Czech Republic | -6,5 | -10 | -5 | -6,5 | 3,7 | 05.2020 |
| Austria | -6,7 | -10 | -5 | -7,0 | 12,8 | 05.2020 |
| Slovakia | -7,1 | -10 | -5 | -6,2 | 5,2 | 04.2020 |
| Ukraine | -7,2 | -10 | -5 | -7,7 | 8,7 | 03.2020 |
| Canada | -7,2 | -10 | -5 | -6,2 | 13,0 | 05.2020 |
| Greece | -9,8 | -10 | -5 | -10,0 | 16,2 | 02.2020 |
| France | -9,8 | -10 | -5 | -7,2 | 8,1 | 03.2020 |
| United Kingdom | -9,8 | -10 | -5 | -6,5 | 4,0 | 03.2020 |
| India | -10,3 | 0 | +5 | +1,9 | 23,5 | 05.2020 |
| Italy | -10,6 | -10 | -5 | -9,1 | 8,0 | 04.2020 |
| Spain | -12,8 | -10 | -5 | -8,0 | 13,8 | 03.2020 |

Source: Own study based on <https://www.forbes.pl/gospodarka/koronawirus-prognozy-gospodarcze-mfw/d742kyd>, retrieved on 30.05.2020 and <https://knoema.com/nwnfkne/world-gdp-ranking-2020-gdp-by-country-data-and-charts> 30.04.2021.

The task of the authorities is, first and foremost, making sure the society and economy survive, good primary healthcare, culture of health and preventing epidemics. Secondly, proper stimulating and driving of growth of economy, employment and production, protection against threats and sustainable development (Bluszcz, 2017). Especially in the times of the pandemic and crisis management. The measure of economic development and optimism of entrepreneurs is mostly the dynamics of percentage growth of GDP, but that is insufficient as the entire welfare of people related to health and sustainable consideration is not taken into consideration.

Therefore own in-depth research should be carried to determine the real selected reasons of economic downturn or crisis regarding the issues of companies and employees in the given region and time.

3. Own research

The research was carried at 2021 in the pandemic. Its purpose as to present the priority ranking of selected management elements, as seen by the employees of various industries and on various positions, from different regions of Lesser Poland (Małopolska). The sample was selected randomly, as far as possible. Table 2 presents own research with participation of 35 employees from Lesser Poland (Małopolska), indicating practical aspects of application of selected management elements.

Table 2.

Usefulness and application of selected elements in management in 2021

| No. | Selected management elements | Which elements are most important in management? | | | |
|-----|------------------------------|--|------------|-----------|----|
| | | yes | rather yes | rather no | no |
| 1. | Finance | 23 | 12 | 0 | 0 |
| 2. | Marketing | 17 | 14 | 3 | 1 |
| 3. | IT Techniques | 17 | 10 | 8 | 0 |
| 4. | Business Plan | 16 | 16 | 2 | 1 |
| 5. | Human Resources | 11 | 18 | 5 | 1 |
| 6. | Lean Management | 10 | 12 | 13 | 0 |
| 7. | Management process | 9 | 20 | 4 | 2 |
| 8. | Network organizations | 7 | 17 | 11 | 0 |
| 9. | Outsourcing | 6 | 20 | 9 | 0 |
| 10. | Virtual Organisation | 6 | 15 | 13 | 1 |

Source: own study among employees from Lesser Poland (Małopolska), September 2021.

Finance, marketing, IT and business plan rank the highest. Lean management, HR and Management process have a consolidated position in the middle, while outsourcing and virtual organization took a spot at the end of the ranking.

Application of broad knowledge and IT in business (Myers, 2013) and to overcome the pandemic or similar threats is necessary and yields positive results in terms of containment of detrimental phenomena. It seems, though, that it is much harder to overcome an economic crisis using only those technologies, as an economic crisis or downturn affects all countries of the world. Furthermore, such economic crisis or downturn impacts strongly those countries that apply IT and modern telecommunications on a mass scale, eager to transition into the model of a developed global information society with no boundaries. Despite the pandemic and expected unfavourable economic data, the IT industry is recording a growth. As one can see, there is high demand for it and for employees, and the behaviours acquired by the society during the pandemic will survive it, laying foundations for the development of this sector.

As shown by further survey-based research in pandemic 2021, family, social, qualifications, experience, and reset are of great importance for the employees. Presentation of the impact of the pandemic on employed people has become popular and appeared in the Polish media already at the beginning of 2020. Further research was carried out among the employees from Lesser Poland (Małopolska) in 2021, from various industries. The sample was selected randomly,

as far as possible. The preferences regarding various elements of management and life of selected 35 employees from Lesser Poland (Małopolska) are presented in Table 3.

Table 3.

Employees' preferences for various elements of management and life in 2021

| No. | Elements: | Which elements are most important in management and life? | | | |
|-----|--|---|------------|-----------|----|
| | | ↓ yes | rather yes | rather no | no |
| 1. | Family | 24 | 8 | 2 | 1 |
| 2. | Social (e.g. social conditions, social life) | 23 | 8 | 4 | 0 |
| 3. | Qualifications and experience | 22 | 11 | 1 | 1 |
| 4. | Rest | 22 | 8 | 4 | 1 |
| 5. | Technological, knowledge, new technologies | 18 | 15 | 2 | 0 |
| 6. | Health and healthy food, family | 16 | 12 | 6 | 1 |
| 7. | Work | 15 | 18 | 2 | 0 |
| 8. | Legal (e.g. legal regulations, justice system) | 15 | 11 | 9 | 0 |
| 9. | Ecological (e.g. clean water, air) | 11 | 17 | 6 | 1 |
| 10. | I'm afraid of a pandemic | 5 | 4 | 12 | 14 |
| 11. | Political (political system, global situation) | 4 | 14 | 14 | 3 |

Source: own study among employees from Lesser Poland (Małopolska), October 2021.

The elements of life related to family, finance, social, qualifications and reset rank high, but so do also health, technology, work, legal and ecological aspects as well as rest. Less attention is given to the pandemic and political aspects in the country and abroad. In some singular cases, the respondents pointed out that technological elements are less important to them, which may be related to their specific work, which is less innovative and does not use modern technologies, which have both benefits and drawbacks. They may also disrupt the balance in the natural environment (Poskrobko, 2012).

4. Conclusion

As a result of a surprise in the form of the pandemic, the environment changes vehemently, which added to another world economy crisis in 2020 and 2021, accumulating since 2008. It may be that this economic crisis would unravel even without the coronavirus pandemic, but on a smaller scale. Currently, however, heads of states and managers of enterprises strive to explain the economic crisis mostly by the surprise linked with the pandemic, not their own poor management, which also led to crisis in previous years, e.g. 2001 and 2008, but without a pandemic. Therefore, a need arises to seek modern technologies, not only medical ones, vaccines and medications against newly mutated viruses, but also in the area of management, modern management concepts and techniques, process management (Bitkowska, 2015; Kunasz, 2010) and crisis management and application of the media in the modern enterprise and economy as well as enhanced application of IT and new systemic and legal procedures (McNeil et al., 2015). Application of knowledge and IT to overcome the pandemic or threats is

necessary and gives positive results in terms of containment of some phenomena. Hope for overcoming the coronavirus pandemic lies in the vaccines, those improved as well, and medications coupled with new management methods, better adjusted to crisis-related threats and rapid changes in the environment, which requires research (Easterby-Smith, 2012).

It is virtually impossible to successfully deal with the economic crisis by means of information technologies alone because the crisis, or economic downturn, impacts all countries of the world and is deepened by the pandemic. Despite the pandemic and expected unfavourable economic data, the IT industry is recording a growth. As one can see, there is high demand for it and for employees. Most companies incur losses during the crisis and pandemic, but for some it is an opportunity to earn more. Assuming that the pandemic and crises will fade away, the state needs to intervene for the survival of the weaker enterprises and payment of allowances for the harmed population. Nevertheless, this cannot go on and on as it will eventually lead to an even deeper economic crisis, chaos and financial system insufficiency, which carries risk of social unrest and the collapse of economies and states.

The basic condition for the survival of enterprises, economies and people is the adaptation to the current variable conditions of the environment, including the environment related to the pandemic. There is also a need for having own strategic resources in enterprises and countries not to become addicted to shaky import.

It seems that the Chinese solution for fighting the pandemic, successful within an autocratic and disciplined Chinese state, cannot be applied in the West: a different culture of the democratic states and the rule of law. Hence the GDP dynamics of all those states is in the negative for 2020 and the coronavirus is still dangerous for the economy; as a result, these countries and regions, e.g. the US, Great Britain and the UE, are pushed into the economic crisis even more. All this while great world economy China shows merely an economic slowdown and positive GDP dynamics for 2020. According to official data, there are virtually no infections. This is some kind of hope for the world economy: China, still standing strong, will help the world. Nonetheless, it might be for the cost being the dominance of China in the world, which can later perhaps be an undesired outcome in the already fourth industrial revolution in the world (Schwab, 2018).

As shown by the survey-based studies carried out at the beginning of 2020, employees value health, work, family, economic, social and even ecological elements. These are, therefore, the survival-related needs according to the Maslow's hierarchy of needs, especially in the face of the pandemic, remote work and global crisis.

Even though economies are opening today, the situation related to the pandemic worldwide is still uncertain. Unfortunately, the next several years may turn out to be similar for both people and economy because of the seasonal nature of infections, the generation of new virus mutations and socio-political conflicts. Hope is pinned, particularly to the countries of the West, upon the vaccines, medicines, modern management methods and new technologies because the countries cannot apply the autocratic and non-democratic Chinese measures. In this day and age,

businesses and organisations need reasonable use of all available innovations (Kraśnicka, 2018) and strategies (Kapferer, 2012) in order to overcome the pandemic and the economic crisis.

Acknowledgements

Publications and research financed from subsidies to "maintain and develop research potential", thanks to AGH University of Science and Technology, Management Faculty, Krakow, Poland.

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COVID PANDEMIC AND FOREIGN DIRECT INVESTMENTS IN THE POLISH ECONOMY

Katarzyna WITCZYŃSKA

Wroclaw University, Institute of Economic Sciences; katarzyna.witczynska@uwr.edu.wroc.pl,
ORCID: 0000-0002-8021-3967

Purpose: The paper presents the issues related to the development of foreign direct investments during covid pandemic time.

Design/methodology/approach: The study used world-bank reports from trading economics portal and Ernst and Young study.

Findings: The aim of the article is to present the changes in the inflow of foreign direct investment in the face of the global Covid 19 coronavirus pandemic to Poland.

Originality/value: The publication presents the results of research conducted on the basis trading economics portal and Ernst and Young study. on the basis of the literature analysis, it is possible to that will have an impact on direct and foreign investments: rapid technological development aimed at reducing costs and expansion to new customers, regional commitment to counteracting climate change and commitment to sustainable development, new proportions resulting from the reorganization of the supply chain (reshoring, nearshoring, offshoring).

Keywords: global value chain, supply chain, direct investment, international investment climate, COVID-19.

Category of the paper: Research paper.

1. Introduction

Foreign direct investment is a very important part of the Polish economy. After accession, Poland became one of the major countries receiving FDI in Europe. Thanks to foreign investors who are guided by specific motives, such as the desire to reach new customers, win a new market, increase profits or access to resources from a given region, the Polish economy has revived and developed. The available statistics show that the amount of FDI in Poland is constantly increasing. International enterprises see great potential in the size of the Polish market, good legal regulations, low employee costs, and in many cases very well-trained staff in the area of the latest technologies and research. Taking into account the above motives, development and good prospects for the Polish economy are expected. The current difficult

situation in Poland and around the world strongly affects FDI. Many enterprises suspended their ventures in 2020 and announced that they would be phasing out more in the coming years. The available analyzes indicate a weakening and inflow of direct investments in Poland. However, the coronavirus has forced many companies to think and introduce positive changes on many levels, such as in the supply chain sector.

2. Foreign direct investment

Direct foreign investment we call investments in which foreign investors have the so-called persistent receipts in a foreign company. There is a certain threshold value that distinguishes FDI from portfolio investments and is 10% of common shares or 10% of voting rights general meetings. Transfers have a huge impact on the importance of the world economy capital in the form of direct investment. FDI is a unique form of investment referred to according to the investment location criterion, i.e. investments are made in another country of residence investor. We divide capital transfers into funds transfers as well specific investment goods. The main investment motives are: income and control. The intention to control gives the investor the ability to influence a foreign enterprise in which that investor holds a share of the capital. On the motive control is affected by the entire transferred package of production factors. In addition to capital goods and labor forces are also transfers of intangible factors such as: marketing and technological know-how, organization and management methods, and research experience development (Jaworek, 2006).

Activities, decisions and directions of foreign activity are not the result of just one motive, but of their entire group. By following many motives, investors maximize profits. Based on the motives for creating new enterprises abroad, we distinguish a classification criterion that distinguishes four forms of foreign investments: (1) resource-oriented (resource seeking), (2) market-oriented, (3) efficiency-seeking, (4) strategic asset seeking.

The above forms can also be divided into defensive and offensive investment strategy. In an offensive strategy, it is the investor who independently starts the investment in the target achieving your goal. The latter defensive strategy, in turn, relates to reaction on market behavior or the policy of the host government. A defensive response is essential to defend your area in the market. These strategies get mixed up often (Rymarczyk, 2004).

Due to foreign investment, an increase in the investment resources of the host country can be noticed, which translates into faster economic growth. Direct economic investments also offer the possibility to modernize production resources, improve technology and improve management as well as increase company efficiency and increasing the quality of manufactured products. General expectations of the host country (Karaszewski, 2005) are powering the weak economy of the host country resulting from low savings internal and technological development

of the economy and the introduction of innovative methods management, and export development.

In addition to financial capital, foreign investors transfer modern management, technology and intellectual capital. This takes the form of patents, technological solutions, licenses, educational activities, technical assistance or scientific exchange. Thanks to the flow capital also includes the flow of knowledge, the flow of people, technology, know-how and other development factors. In broad terms, the flow of technology is the transfer of technical knowledge and know-how how to apply such technology in production. Transfer concerns the development, acquisition, adaptation and use of knowledge (Umiński, 2002).

3. FDI in Figures in Poland bevor COVID

Properly functioning supply chains increase the value of international trade. Global logistics companies ensure the flow of goods between countries and are an essential element in the functioning of this phenomenon. It can be seen that prior to the pandemic, the value of global trade has increased in recent years. In 2019, this value oscillated at a similar level. In turn, at the turn of March and May 2020, there was a massive decrease by approx. 17.7%. This is shown in figure 1. According to the study by Ernst and Young 2019 was one of the best years in Europe in terms of the number of planned foreign direct investments. EY's analysis shows that 6,412 FDI projects were announced in Europe last year, an increase of 0.9% compared to 2018. A significant increase in foreign investment and the first place in terms of the number of investments was taken by France, which recorded 1 197 newly announced FDI (+17% y/y). The next steps on the podium were: Great Britain with 1,109 investments (+5% y/y) and Germany, which recorded a 3% decrease in the number of FDI to 1,109. Poland, with 200 new ventures planned by foreign investors, was ranked 7th in Europe. The EY study showed differences between countries and industries in the impact of COVID-19 on the implementation of previously planned investments. In competitive economies and where projects related to the construction of shared service centers, investment in the IT sector or the construction of research and development facilities, almost 80% of planned investments are implemented. This is significantly higher than the European average of 65%. Among the countries with a higher investment implementation rate, EY includes Poland, Ireland and Portugal. The data for 2019 is unfortunately a story that will not repeat itself for a long time. Despite the fear of a hard Brexit and tensions in world trade, Europe managed to achieve a symbolic, but still increase in planned FDI. The outlook for the coming years is not good, and without foreign investments, returning to the path of economic growth may be more difficult. Poland figures among the most attractive countries in Europe in terms of FDI. According to UNCTAD's 2020 World Investment Report, FDI inflows to Poland remain stable in 2019, reaching USD

13,2 billion, slightly up from USD 13,9 billion. The total stocks of investments in the country stood at USD 236,5 billion in 2019, an increase of 26% when compared to 2010 level. Poland is the first largest recipient of FDI inflows in Central Europe. Most stocks are held by Germany, the Netherlands, Luxembourg and France, with investments directed mainly to the manufacturing, financial and insurance activities, and wholesale and retail sectors. In addition, this past year FDI data showed a high percentage of investors coming from China and South Korea.



Figure 1. Monthly changes in the value of global trade in 2017-2020 (percent)s (source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Netherlands Bureau of Economic Policy Analysis (CPB), World Trade Monitor [online database] <https://www.cpb.nl/en/worldtrademonit>, 2020).

Table 1.

0 Top European FDI destination countries, (source EY)

| Rank | Country | 2017 | 2018 | Change 2017/18 | Market share (2018) |
|----------|---------------|------------|------------|----------------|---------------------|
| 1 | UK | 1,205 | 1,054 | -13%↓ | 17% |
| 2 | France | 1,019 | 1,027 | 1%↑ | 16% |
| 3 | Germany | 1,124 | 973 | -13%↓ | 15% |
| 4 | Spain | 237 | 314 | 32%↑ | 5% |
| 5 | Belgium | 215 | 278 | 29%↑ | 4% |
| 6 | Poland | 197 | 272 | 38%↑ | 4% |
| 7 | Turkey | 229 | 261 | 14%↑ | 4% |
| 8 | Netherlands | 339 | 229 | | 4% |
| 9 | Russia | 238 | 211 | 11%↓ | 3% |
| 10 | Ireland | 135 | 205 | 52%↑ | 3% |

Central and Southeast Europe (CSE) is now considered the second-most attractive region for investment. Five years ago, it ranked only fourth. Within CSE Poland is an unquestionable leader and the 6th most attractive country in Europe. Investment in Poland surged 38 per cent to 272 FDI projects in 2018. Poland's main assets are its strategic position, a large population, its European Union membership, economic stability, cheap skilled labour costs and a fiscal system attractive to businesses. Furthermore, Poland has a number of dynamic Special

Economic Zones, and the government founded the Polish Investment and Trade Agency (PAIZ) to improve conditions for FDI. However, Polish law limits foreign ownership of companies in selected strategic sectors, and restricts acquisition of real estate, especially agricultural and forest land. Furthermore, the current conservative government's willingness to increase the percentage of domestic ownership in certain industries (including banking and retail, which are currently dominated by foreign companies) negatively contributed to foreign investment. Overall, the Polish business climate is good and the World Bank ranks Poland 40th out of 190 countries in its 2020 Doing Business ranking, losing 7 positions compared to the previous year. As can be seen from the chart above Foreign direct investment in Poland increased by EUR 209 504.80 million in 2019. The virus that appeared in the second half of December 2019 and quickly spread throughout Asia, Europe and North America. Currently, almost every country in the world has reported cases of patients infected with this virus (Li, 2020), and this undoubtedly affects FDI. According to the recently published report by Ernst and Young Unfortunately, due to the recent events in the world and in Poland, and more specifically with the COVID-19 virus, according to a recent analysis prepared by EY, the attractiveness of direct investments will decrease. According to the report, 6,412 FDI are planned in Europe in 2019. However, the current difficult situation caused them to decline. EY estimates that projects planned in the previous year were 65 percent complete, 25 percent delayed and 10 percent canceled. According to the Ernst and Young study from 2020, as many as 83 percent of managers in the survey assumed reorganization of the supply chain and the transfer of selected production stages to new member states in a European country. The current situation has led to many changes in the supply chain sector. Experts from C.H. Robinson analyzed the last period and made the following conclusions. The first is the visibility of loads, which manifests itself in an increased need for visibility and transparency of the flow. As a result, companies gain a greater understanding of inventory and sales, supply networks, strategic locations of suppliers and their goods, inventory levels, and customer preferences. Thanks to the latest technology, appropriate tools and careful observation, companies will be able to develop more effective operating strategies, provide more efficient service and flow of goods exchange. Such efficient organization and activities will lead to lower costs. Such actions also lead to the development of a good risk management strategy in the event of a crisis. Detailed knowledge at every stage of the supply chain enables the development of efficient solutions. Another important element was the number of available suppliers. The pandemic has shown us that relying on only one supplier for financial and logistical reasons is not enough in the event of a pandemic. According to the analysts from the study, it is important to have different sources of obtaining goods from different geographic locations checked. Such conservative measures will facilitate the diversification of the supply chain. The fourth conclusion concerns efficient customer service. The pandemic has shown us how important the latest technology, applications and online shopping are. During this difficult period, we were forced to buy online in most cases. For this reason, experts propose to take care of and improve websites, mobile applications and customer

service in order to ensure the best quality of their services in crisis situations. The last conclusion relates to the 4.0 chain. It is based on the combination of the latest technology with available machines, information transfer in the cloud as well as analytics and artificial intelligence. Thanks to this type of solutions, enterprises will gain accurate knowledge of the current demand, quick response to changing conditions and checking potential scenarios. However, Europe's outlook after COVID-19 is pessimistic: 49% of surveyed managers according to Ernst and Young believe that the continent is threatened with less or severely diminished attractiveness as a location for foreign investment.

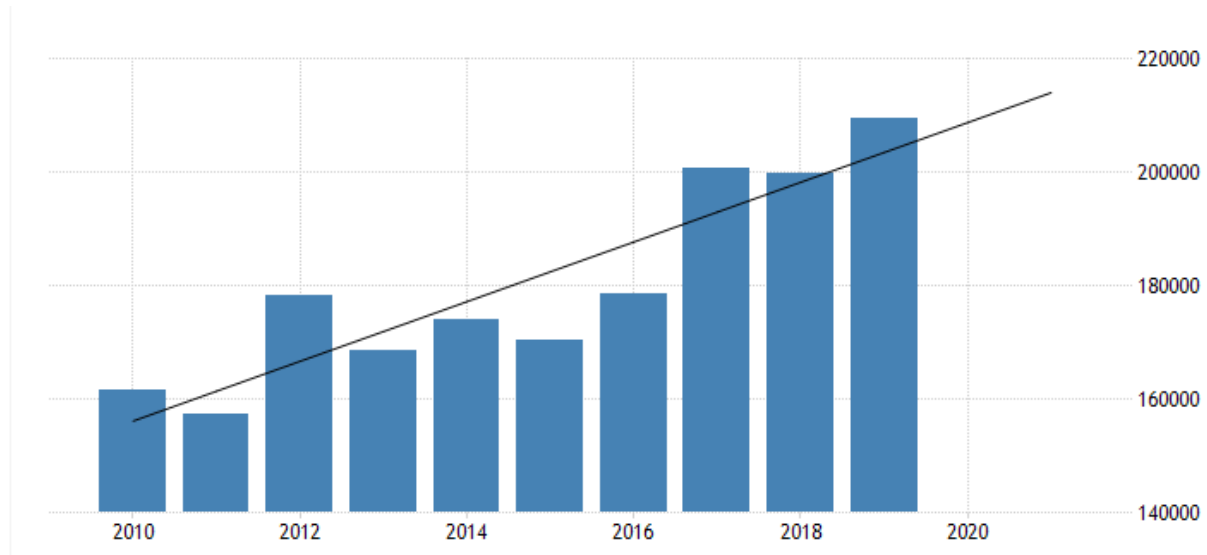


Figure 2. Poland Foreign Direct Investment 2010-2019 (source: <https://tradingeconomics.com/poland/foreign-direct-investment>).

Poland's position on the world map of foreign direct investment is not particularly significant. Regardless of whether you count in dollars or zlotys, the scale of foreign direct investment in our country is less than 1 percent. global cross-border investment. The importance of our country as a place for investment capital may, however, increase if UNCTAD's predictions prove that large European companies will – after the experiences of the pandemic - look for or create new suppliers, perhaps not as cheap as at the end of the world, but much closer geographically. Poland can benefit from this. It turns out that, compared to other countries in Europe and the world, Poland is unique. "FDI Intelligence", operating within the Financial Times, informed that Poland is a leader in Europe in terms of increasing the inflow of foreign direct investment (FDI). In addition, the European Commission forecasts that the recession in Poland is to be the shallowest in the entire EU - in 2020 Poland's GDP will shrink by only 4.6 percent. In turn, in the published forecasts, as part of the June edition of the "Global Economic Prospects" report - the World Bank forecasts a decline in Poland's GDP in 2020 at the level of 4.2 percent, emphasizing that the fiscal situation in Poland is better than in other countries of the region, also thanks to "Diversification and competitiveness".

4. Summary

Foreign direct investment in Poland increased by EUR 209 504.80 million in 2019. The current difficult situation in Poland and around the world has a strong impact on FDI. Many companies have suspended their ventures in 2020 and have announced that they will be phasing out more in the coming years. The available analyzes indicate a weakening and inflow of direct investments in Poland. However, the coronavirus has forced many companies to think and introduce positive changes on many levels, such as in the supply chain sector.

The current difficult situation that prevails in Poland and around the world in connection with COVID-19 strongly affects FDI and decisions taken at the highest management levels. Many enterprises suspended or canceled their projects in 2020 and announced the withdrawal of further ones in the following years (25% were withdrawn and 10% were canceled from planned FDI in 2020). The available analyzes indicate a weakening and an influx direct investments in Poland in the coming time, and the newly created threats also influenced the changes in the supply chain. So far, foreign direct investment in Poland has had going well however the COVID-19 pandemic has led to many withdrawals, cancellations, changes or difficult decisions. We are unable to determine how long the pandemic and the current coronavirus last will persist in Poland, Europe and the world.

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ADVANTAGES OF USING DIRECT MARKETING IN THE SALES ACTIVITIES OF THE ENTERPRISE

Olena ZARICHNA

Uzhhorod National University, Department of Business – Administration, Marketing and Management;
zarichna32@gmail.com, ORCID: 0000-0002-2947-8732

Purpose: The aim of the article is a study of the development of the concept of "direct marketing", research of the methodological and informative providing of realization of direct sale in activity of sale enterprises. To achieve the goal, the following tasks are set: systematization, comparison and analysis of theoretical approaches of the Ukrainian and foreign scientists, is to essence of concept "direct marketing"; researches of basic instruments of realization of direct sale by the performers of entrepreneurial activities; determinations of advantages and lacks of the use of the direct marketing are in activity of enterprises; grounds of the use of the direct - marketing are in activity of sale enterprises.

Design/methodology/approach: To the article were used methods of comparison, grouping and generalization – for research and analysis of opinion of scientists in relation to development of the direct marketing, method of systems analysis – for systematization of modern forms of the direct marketing and ground of them role in the sale activity of enterprises, and also formulating of conclusions.

Findings: The analysis of scientific labours and researches in relation to the use of the direct marketing in activity of the Ukrainian enterprises showed that the direct marketing was the special form, process, method of effective realization of sale of products, in the modern business conditions.

Practical implications: Researched in the article modern forms of the direct marketing show that today, their use in the sale activities of enterprises not only facilitates the sale of goods and services at the market, but also allow to form effective, direct of long duration relations with consumers, to choose effective marketing strategy and program of actions, which influences on informing of market environment, growth of having a special purpose audience, increase of volumes, sale and expansion of limits of realization of business.

Originality/value: The article contains the validity of the practical use of modern forms of direct marketing in the activities of Ukrainian enterprises: Premium Food (Mr. Grill), LTS “Solomia”, “Rodinna kovbaska”, “Henkel Bautechnik Ukraine”, TM “Curtis” and others.

Keywords: direct marketing, consumer, direct sale, Internet marketing, e-mail marketing, content marketing, SMM marketing.

Category of the paper: general review.

1. Introduction

In the conditions of development of market relations, performers of entrepreneurial activities, carrying out trading in commodities and services tried to find the most effective, effective ways of their sale, methods of distribution at the market and offering to the consumers. Today, such effective way is exactly the direct marketing that by means of the instruments and methods helps not only effectively to carry out the sale of commodities and services, and also assists the increase of economic efficiency of enterprises, bringing in of greater contingent of consumers, puts right of more long duration relationships with customers, forms more competitive edges for enterprises and improves their competitiveness at the market.

Taking into account research problems, the aim of the article is a study of the development of the concept of "direct marketing", research of the methodological and informative providing of realization of direct sale in activity of sale enterprises. To achieve the goal, the following tasks are set:

1. systematization, comparison and analysis of theoretical approaches of the Ukrainian and foreign scientists, is to essence of concept "direct marketing";
2. researches of basic instruments of realization of direct sale by the performers of entrepreneurial activities;
3. determinations of advantages and lacks of the use of the direct marketing are in activity of enterprises;
4. grounds of the use of the direct – marketing are in activity of sale enterprises.

2. Literature review

Such scientists as Garkavenko, S. (2002), Burnett, Jh., Wells, W. & Moriarty, S. (1999), Kotler, Ph. (2007), Armstrong, G. (2009) in the labours investigated essence and development of the direct marketing, as major of communication means of influence in opinion of and decision of consumer in relation to the purchase of commodities. Armstrong, G. (2009), Keller, K., & Kotler, Ph. (2016), Connie, L. Bauer (1992) in the researches the special attention is spared to the basic forms of the direct marketing, greater advantage from that is got to e-mail trade and distribution of suggestions. As practical experience shows, exactly due to the use of effective mechanisms of the direct marketing and facilities of direct sale, such large the world companies as Amway, Mary Kay, Herbal Life, Apple and other able to score a world success and promote the competitiveness in the world market.

Scientists Burnett, Jh., Wells, W. & Moriarty, S. (1999), Fulk, J.(1993), Kuzior, A. & Lobanova, A. (2020), Kuzior et al. (2021) attention was anymore paid in the researches to forming of successful marketing activity through the study of different of communication facilities, marketing engineering programs, especially investigated facilities of advertisement, that describe the traditional forms of the direct marketing now.

Stone, M., Davis, D., Bond E. (2003), considered that undoubted success of any trade brought direct connection with a consumer, without the participation of an intermediary – that is direct marketing. In the labours they explored the issues of forming direct contact with a client and concluding a profitable agreement with him, how to save present clients and attract new, how to plan an advertising campaign and successfully to conduct it.

However, the development of modern information technologies and research Grewal, D., Hulland, J., Kopalle, P.K. et al. (2020) indicate that it is necessary to introduce innovative approaches of sale of products. This, in turn, requires businesses to use except the traditional forms of the direct marketing, yet and more modern, innovative forms. Exactly it and specifies on the necessity of realization of more deeper research of influence of modern forms of the direct marketing on activity of enterprises that is busy at the sale of products.

3. Methods

To achieve the purpose and objectives of the article, the following research methods were used: of comparison, grouping and generalization, method of analysis of the systems and formulating of conclusions.

4. Results and discussion

Forming and development of the direct marketing as an effective means or method of realization of sale of products began very a long ago, when the producers of the manufactured and consumer goods personally offered to the consumers to buy their products. In those times the concept "direct sale" or "direct marketing" was not yet separated, but basic methodology that now describes these terms used and brought a corresponding effect. The so-called "intermediators" of their products were or producers themselves, or peddlers or travelers who bought goods and resold them in other countries. The XV century is described by appearance of postal organizations in Europe and use of the first catalogues that contained information about the products of producers, and later catalogues with the list of scientific editions and books.

Already in the XIX century the "direct marketing" as a concept was entered in life and described the special technique of realization of direct sale to the consumers on attractive prices. The analysis of scientific doctrines showed, that at this time were published the first catalogues, which allowed to give up services of mediators and for the increase in demand of consumers, considerably to mark down prices. Exactly Aaron Montgomery Ward (1843-1913), American retail salesman, the first began to use the technique of direct sale: buying goods, he placed them in postal catalogues and resold to the clients. Just such a mechanism allowed to him to create yet greater loyalty for the clients and attain successes exactly with this sphere. In 1967, Lester Wunderman defined the term "direct marketing" as modern activity from adjusting of direct connections between the suppliers of commodities and services and consumers. He is considered the father of the modern direct marketing, which has a great number of features and advantages in order that success had any business at the market.

Certainly, with the increase of amount of researches of research workers of concept *direct marketing* tested substantial changes. Will consider the looks of different scientists in a table 1.

Table 1.

Looks of research workers to interpretation of concept «direct marketing»

| Author, source | Determination |
|---|--|
| Balabanova, L. (2012) | Direct marketing shows by itself direct communications with the selected certain buyer, more frequent all as the individualized dialog with the purpose of receipt of immediate review or realization of agreement. |
| Harkavenko, S. (2002) | Direct marketing is the direct socializing of salesman/producer with an eventual buyer, counted on a certain reaction by the use of various facilities of communications (a telephone, television, advertising, is in the Internet, catalogues). |
| Hrigorchuk, T. (2007) | Direct marketing is interactive application of marketing, which uses one or a few publicity transmitters for realization of measureable reaction/or transaction in any place. |
| Zozulev, A., Kubishev, N. (2011) | Direct marketing is a process of distribution of commodities at the market which foresees establishment of the unpersonal direct interactive contact with consumers. |
| Etzel, M.J., Walker, B.J., Stanton, W.J. (1991) | Direct marketing – as using advertising to contact consumers who, in turn, purchase products without visiting a retail store. |
| Kotler, P., Armstrong, G. (2011) | Direct marketing is marketing through various advertising media that interact directly with consumers, generally calling for the consumers to make a direct response. |
| McFadden, R.D. (2014) | Direct marketing is a form of transmission of suggestion, when organization directly communicates a preliminary select buyer, to get a direct answer. |
| Stone, M., Davis, J., Bond, A. (2003) | Direct marketing is planned continuous realization of account, analysis and supervision of relation consumer, expressed as a direct review, with the purpose of making of future marketing strategy, development of long duration positive relation of clients, and also providing of the protracted success, in business. |

Each of – for considerable research workers tried to interpret the direct marketing in accordance with his end-point, but all of them considered that it was instrumental in establishing of personality connection with consumers, during which formed a necessity to buy the product and ultimately benefits both for a salesman and consumer.

The scientists, Balabanova L. (2012), Garkavenko S. (2002), Kotler P. and Armstrong G. (2011) specified on that, the direct marketing is form of communication connections. Robert D. McFadden (2014) and A. Zozulev (2011) describe the direct marketing, as a process or mean of distribution of products through establishment of direct contact with an consumers, to get an immediate answer. William J. Stanton, Michael J. Etzel and Buce J. Walker (1991) specify in the researches, that the direct marketing is advertising, that has an effective influence in opinion of consumers and helps them to choose a necessary products.

Certainly, it is not total research of scientists which probed development of the direct marketing and its interpretation. Most, the direct marketing is used in the USA and some European countries, where there are more possibilities and prospects than in Ukraine. Nevertheless, Ukrainian direct marketing tested substantial changes also, and to it same promoted development of information technologies and business techniques.

At the beginning of development of the direct marketing in Ukraine, enterprises were used by more traditional forms of sale products – personal sale, direct mail marketing (postal deliveries of letters). But afterwards, innovative approach to sales management, which consisted in the special attitude toward the needs and demands of consumers and increase of amount of volumes sale, assisted the use of more modern forms of direct sales, such as: Internet marketing, content marketing, SMM marketing (marketing is in social networks), e-mail marketing, SMS marketing, experimental marketing, catalog marketing, etc.

Clearly, that each the noted forms of the direct marketing has the advantages and disadvantages, and also needs the special terms of the use in sale activity of enterprises. So, Internet marketing, is one of the most popular forms of direct marketing, which today has plenty of methods to promote the company's products in the Internet environment. Basic advantages of this form is interactivity, simplicity of the use, maximal scope of audience, informing. In relation to failings, it is foremost desirable to specify on certain high cost, because development of page, its filling, and start of advertising requires certain charges from enterprises. Also, the significant disadvantage is an increase of competition, which can influence not only the reduction of the target audience, but also on effectiveness of enterprise. It does not follow to forget and about the observance of copyrights and norms and rules of conduct of business in accordance with standards. Since, a consumer at the market values quality and safe goods and services offered, businesses need to be careful, especially, when it comes to fraud.

Content marketing is a modern form of Internet marketing, which is directed on organization of effective advancement and increase of having a special purpose audience through informative gap-fillingness of sites, which is instrumental in motivation, studies and informing of target audiences. Advantages of this form is a receipt of the most complete information about products, services and activity of enterprise, speed of finding of necessary information, promotes status, greater scope of having a special purpose audience. Failing is high cost, requires a permanent update, the receipt of result does not guarantee.

SMM marketing, social marketing or marketing in social networks, today is the powerful instrument of the direct marketing for enterprises, in fact it helps to put right effective contacts with potential customers in social networks, with the purpose of advancement of brand, products and services. The advantages of this form is a cheapness (low costs for the organization), social co-operation of users, interactivity as mean of greater access to information, aimed at a target market with the personal interests of users of site. In relation to failings, it is here necessary to mark the cost of time of maintenance of social networks. The permanent monitoring of visit, comments, answers to questions, placing of information, requires from developers to outlay much time, that advancement gave a result. Also trust of users, loyalty of customers sometimes can be undermined by false reviews of fraudsters or competitors, So, the enterprises should pay special attention to the confidentiality of information and creation of copyrights on advancement of products through social networks.

E-mail marketing is advancement of information about goods, services and activity of enterprise, through letters sent by e-mail. This technique allows to improve sales, amount of clients, on to adjusting of connections. The disadvantages of this form is that not all users daily check up mail and read letters, and therefore it will be difficult to analyze the effectiveness of e-mail marketing. Certain, for correct registration of emails necessary to attract leading specialists, and this entails additional costs. Another disadvantage may be the presence of spam – filters, which lead to the removal of suspicious emails.

By the next effective mean of adjusting of contacts with an audience, advancement of commodities and effective sale is SMS marketing. It is an instrument, that allows to carry out mass delivery of information plenty of users. The big advantage of this form of the direct response marketing is that today all customers have mobile telephones, and can read sms even without connecting of the Internet. Also advantage is to receive information whether the recipient has read the letter, which in turn helps to analyze the number of informed consumers and the ability to receive immediate feedback. The disadvantages of this form are that usually sms messages are too compressed and does not give sufficient information to consumers, it is also not possible to place a picture or photo next to the text, which would be instrumental in the greater personal interest and also in some cases sms messages can be perceived as a spam.

The experimental marketing (marketing of bringing in) is a form of direct marketing, which helps target audiences on the basis of acceptance of participating in the special seminars, webinars, exhibitions and fairs, to get all necessary information about products, services, promote the knowledge about a brand, to deepen loyalty and to find out a trust, and also to extend a client base and form proof of long duration relations. The disadvantage can be that the experimental marketing requires a lot of time and efforts on organization of process of advancement.

No less important, although it is considered one of the oldest methods of the direct marketing in relation to the sale of products, there is marketing after catalogues. Yes, this form is outdated, but probing activity of large organizations, which scored a success at the market all of them have in the arsenal exactly catalogues, which are gap-filling all necessary information about products and services which are offered to the customers. Catalogues, as a rule sent or by ordinary mail or e-mail, to those customers, which carried out the purchase of commodities of organization or visited a web site. The advantages of catalog marketing are a choice of goods by store, possibility of the detailed study of information about a product, choice of wide spectrum of products, wide scope of market. In relation to failings, it is here possible to select the costs of catalog design, a direct contact absents with a customer, protracted cost of ordering goods

All described forms of the direct marketing certainly are not the unique. Investigational, and already used and other varieties of instruments of the direct marketing, which are constantly perfected and create more advantageous terms for realization of sale of products. But that not less than a necessity is a selection and ground of some features of the use of the direct marketing exactly in sale activity of enterprises.

The world develops, new technologies are created, the innovative going is developed near the processes of bringing in and maintenance of clients, facts are inculcated more, more progressive methods of advancement of products at the market. In accordance with it, for enterprises there are new possibilities for development of the business, increase of base of buyers, increase of volumes of sale and providing highly of level of competitiveness. Exactly direct marketing, the use of his instruments is given by possibility effectively to plan, to organize and carry out the sale of products.

Consequently the features of the use of the direct marketing in sale activity of enterprises are:

1. Possibility to promote anything: product, favour, brand, name. All enterprises and organizations planning marketing activity, developed by the proper strategies, which will help them to develop the business and position themselves at the market. Certainly, first of all, it depends on select direction. Introduction of instruments of the direct marketing will help an enterprise to attract attention on computer-integrated objects, that next to a commodity, to examine a brand, service, sale, etc. So, for an example, the Ukrainian company Premium FOOD (Mr. Grill), thanks to the forming and use of

on-line trade was able not only to triple sale of products, but also to organize the effective service system and present their products, brand on the large markets of the USA, Europe and Asia. (5-th annual BIG – Trade-Marketing Show – 2021: “In all heavy”).

2. Reduces the risk of intercept of information competitors and requires less charges on advertising, than MASS-MEDIA. In modern terms, the Ukrainian market is supersaturated similar goods, so enterprises are try to search for the most optimum going near informing of users about advantages of products, using more economic methods of advancement. Presentation of information in the Internet environment does possible, accelerates the process of distribution of information, helps to increase a having a special purpose audience and at the same time provides charges on marketing less than, if an enterprise used the traditional forms of the direct marketing, such as television, newspapers, magazines, etc. For example: the managing director of LTD. «Solomia», at 5th annual conference of Big – Trade-marketing Show – 2021, that took place in Kyiv (02.2021) noted that the leader as an advertising tool for direct sales as opposed to television was the Internet channel and also Chrome, Viber and YouTube. In particular, in September of 2020, rating of their scope attained 99%.
3. The indexes of the direct marketing are easier measured and analysed. Through the use of instruments of the direct marketing, establishing direct contact with an audience, enterprises must possibility get an immediate review, answer in relation to the decision of user, to purchase the offered commodity, get a reaction on the presented information or possibility to probe future expectations of consumers. By creating an appropriate database about clients, enterprises can at once analyse the indexes of work, define next steps in relation to work with clients.
4. Direct socializing with a having a special purpose audience, creation of trust, increase of loyalty of consumers. This feature is a very important factor, which influences on forming and increase of client base (target audiences). So, for an example, Ukrainian company, brand «Rodinna kovbaska» which produces meat and bakery products with the help of mobile marketing (in particular Viber) inculcated in sale activity a chat boat, that enabled to define the most popular products for users and personalization suggestion. The company on a production and sale of build mixtures of «Henkel Bautechnik Ukraine» and TM «Curtis» is a producer of vitamin teas, marked that, thanks to the introduction of marketing in social networks, managed to automate communications with consumers, to increase an audience, promote the value of brand in the eyes of consumers, and also to promote the planned indexes of sale of products. (5-th annual BIG – Trade-Marketing Show – 2021: “In all heavy”).

5. Facilitates the process of segmentation and keeping, aiming, on a concrete group, increase of having a special purpose audience. Segmentation is a process of distributing of users in accordance with their interests, necessities, social and behavioural characteristics. Creating the groups of consumers the direct marketing allows to pick up such marketing's programs, which will take into account necessities, commodities and instruments which will be able positively to influence on the conduct of users and lay their attention. Also the proper bases of clients, help in the analysis of work of enterprises and subsequent contacts with select segments, determination of price strategy, etc.
6. Adjusting of long duration mutual relations. So as, the direct marketing is based on forming of direct contact with consumer, the process of cooperating with him must be based on the stage-by-stage decision of questions, which touch informing, offering to him of products or acquaintance with activity of enterprise not only, and also with the subsequent ways of collaboration, because from positions of the direct marketing – a consumer is a «mean» which will provide an income and protracted development of business in the future.
7. Possibility of creation an effective database is about the clients of returning to the collaboration of the lost and «forgotten» clients. A database is the organized array of information about permanent (or potential) buyers, including information of geographical, demographic, psihografical nature, and also information about a purchasing conduct (Balabanova, 2012). Such databases provide an opportunity to improve tactical approaches to work with customers, reduce the cost of maintaining sales staff, resume work with customers who have a low purchase frequency, improve work with customers by organizing regular deliveries of products, according to deadlines, etc.

5. Conclusions

The analysis of scientific labours and researches in relation to the use of the direct marketing in activity of the Ukrainian enterprises rotined that the direct marketing was the special form, process, method of effective realization of sale of products, in the modern business conditions.

The modern forms of the direct marketing are considered in the last few years attained progressive development, purchased new innovative kinds, which not only facilitate the sale of goods and services at the market, but also allow to form effective, direct of long duration relations with consumers, to choose effective marketing strategy and program of actions, which influences on informing of market environment, growth of having a special purpose audience, increase of volumes, sale and expansion of limits of realization of business.

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SOCIAL REALITY IN THE CONTEXT OF SOCIAL MEDIA AND MOBILE TECHNOLOGIES

Katarzyna ZAWIERUCHA

Faculty of Command Management, War Studies University, Warsaw, Poland; k.zawierucha@akademia.mil.pl,
ORCID: 0000-0002-9439-5589

Purpose: The article focuses on defining the concept of mobile technology and social media and presenting the novum aspects most affecting the social reality. The aim of the article is to emphasize the importance of mobile technologies and the continuous development of information technology in terms of the importance of social media. As a result, the article presents opportunities and threats to the world resulting from the use of the described technologies and gives an opinion on the rapid development in this aspect.

Design/methodology/approach: The considerations and analysis made it possible to identify the causes of excessive use of mobile technologies and to present the most commonly used types of social media.

Findings: The article shows the essence of mobile technologies and the likely direction of development in this aspect. The article defines the social reality in the context of social media and analyzes the modern world determined by technologies. The information contained in the article shows the huge increase in the importance of mobile technologies at the expense of real life and shows the priority of general improvement of the quality of life in favor of addiction and manipulation.

Originality/value: The information contained in the article defines the concept of mobile technologies, social media and social reality, presents selected issues related to these aspects and indicates the direction of world development in the context of the issues described.

Keywords: social media, mobile technology, social reality.

Category of the paper: review publication.

1. Introduction

The continuous development of the modern world caused by the development of information technologies, mainly mobile technologies, affects the inevitable changes in the social reality. The changes taking place in recent years have contributed to the analysis of the aspects of the present world in the perspective of further technological changes. The factor

supporting taking up the indicated subject was the topicality of the essence of mobile technologies and the presentation of opportunities and threats accompanying its use.

Changing social platforms and the emergence of new platforms are part of today's world. However, not only the changing technology, but also the growing awareness of consumers, their education and knowledge of some functions creates today's reality. Currently, the basic communication tool is the Internet, using mobile technologies, and monitoring the Internet and social media allows you to achieve many benefits, both in private and professional life.

The new technology makes it possible to acquire new customers, improve the image, help stay ahead of the competition and get to know customers and their opinions better. From the point of view of marketing, a very important element is also cooperation with influencers in order to reach recipients of given products or services. Social media has such a strong position that they are able to manipulate huge numbers of users, and the right products go to influencers who have the right target group for the product. Social media and mobile technologies give the opportunity to develop, meet people, establish contacts or maintain those already established. They develop awareness, facilitate access to many amenities that today's world offers and often give the opportunity to earn easy money.

Unfortunately, mobile technologies are also a huge source of addiction. The use of mobile technologies stimulates certain expected behaviors, deprives of control over surfing the Internet, over making decisions and expressing emotions. Lack of control related to long-term spending of time in virtual space negatively affects human sleep, leads to a syndrome phantom vibration, e.g. while waiting for a message, or makes a person more susceptible to the influence of a mobile device. It also seems probable that people addicted to the Internet, and thus to social media, cease to be a self-thinking people and constantly identify with other people, the so-called crowd mentality. This makes the situation very advantageous from an entrepreneur's perspective, and many companies invest huge amounts of money to be included in someone's post, e.g. on Instagram, as it will make many people buy the product without prior analysis. Unfortunately, this is not a favorable situation for the Internet user.

It is also worth noting that huge amounts of data and information are delivered to the recipient only so that the human brain will not be able to process them all and recognize which information is real and which is not. Mobile technologies that manipulate human functioning also negatively affect concentration, and the use of technology while performing an activity causes distraction.

Huge interest in mobile technologies, and thus social media, is inevitable, and not using what technology offers more and more often leads to the inability to function in today's world. People function on the border between the real and the virtual world or completely transfer their lives to the unreal world. The loss of interpersonal relationships caused by the excessive use of technology leads to loneliness and inability to function without technology and the Internet.

The main purpose of the article is to identify mobile technologies and social media, to present the most popular social networking sites and to analyze the opportunities and threats resulting from the use of what technologies offer. In order to achieve the goal of the article, mobile technologies, social media and social reality have been defined, the benefits of using technologies and the dangers of improper or excessive use of mobile technologies have been presented, the presents the essence of functioning of technologies and determined the influence of technology on the development of the world.

2. The concept of mobile technologies

Multimedia devices are increasingly interfering with society and have a strong impact in areas related to work, entertainment, science, communication and a number of other services provided every day. Thanks to mobile technology, users have the ability to access the Internet, and thus to any services that use connectivity and to communicate with other people. Currently, interpersonal communication very often takes place via video calls, SMS/MMS messages, e-mail or instant messaging. Purchasing products and services involves shopping online, without leaving your home, with delivery to a selected place, current viewing of prices, opinions, availability and other desired information, and financial management is online or mobile banking and online payments. Users' attachment to mobile devices, often equated with addiction, leads to changes taking place in the area of spending free time, and contributes to the creation of new functions in order to meet newly emerging needs.

The term mobility comes from Latin (mobile) and means the ability of an object to move or the ability to be moved, as well as the movement itself. The term mobile technology, in turn, is associated with all kinds of devices, from the simplest mobile phones to the most advanced and newest discoveries of information technology, used for the most common use. Mobile technologies make it possible to process, retrieve and send any data without the need to use a wired connection to the network (Gajek, 2013).

Therefore, mobile technology applies to all tools, devices or products that can be used on the move. Taking into account information technologies, mobility is permanently connected with wireless networks, where their continuous progress and permanent presence conditions the functioning of electronic devices dedicated to work while being connected to the Internet. Therefore, the concept of wireless in the context of the operation of mobile devices with Internet access can be treated interchangeably with the concept of mobility (Pawelozek, Korek, 2009).

The mutual penetration of mobile telephony (mainly smartphones) with the Internet creates the so-called mobile space (m-space), which is an extension of the Internet space, which is considered to be virtual space, i.e. an artificial reality, created thanks to information technology.

Virtual reality, thanks to its technical infrastructure, enables the achievement of the goals of enterprises, institutions and private persons (Wielki, 2012).

Mobility, i.e. the ability to move a given device and the ability to use it on the move, is currently a scalable feature of mobile devices compared to the parameters related to the visual characteristics of devices, e.g. size or weight. The mobility of the device also includes work ergonomics related to the device's usability, interaction and functionality, resistance to environmental or weather conditions, e.g. water resistance, functionality related to data transmission, or the security of data transmission.

Mobile technologies can be divided according to the demand and comfort of use (Naismith et al., 2004):

- portable (portable) and personal, i.e. mobile phones, smartphones, laptops, tablets and other digital devices with mobile Internet,
- stationary and generally accessible, e.g. projectors, interactive boards, devices and software for videoconferencing, stationary consoles, language laboratory equipment and others.

The popularity of browsing the Internet with the use of mobile devices is growing rapidly, and their functioning has a key impact on the development of countries. It is also important to believe that the expenses of all companies on mobile creations are much higher than those spent, e.g. on newspaper advertisements. As mentioned, the changes that mobile technologies bring, apart from social life, revolutionize the sphere of business. The dynamic development of wireless access to the network, thanks to the use of mobile devices, opens up new opportunities for entrepreneurs operating in various business sectors, as well as individual sellers. This mainly applies to mobile e-commerce (m-commerce). This specific type of trade has its basis in e-commerce, but it is an extension of it with the possibility of making purchases at any place and time, thanks to the mobile technology which owes its name. Undoubtedly, the changing patterns and rules of social behavior show the huge potential of wireless solutions.

The increasing importance of mobile devices, mainly smartphones, greater mobility of society, improvement of communication processes, and an increase in data transfer speed lead to the formation of a society that has constant access to data regardless of the place and time (Krzysztofek, 2006). A huge number of portals, websites or services means that you can find almost any information on a specific topic on the Internet. Thanks to mobile technology, it is possible at any time and in any space, wherever there is a range of mobile telephony.

The vision of a society that exists thanks to free access to data creates a new type of society, i.e. a mobile society, living in a global village, where globalization and information technology create a social reality that is created every day. A society surrounded by mobility, which more and more often communicates through interactive dialogue instead of traditional communication, creating the present and the future.

The elements that distinguish the mobile society are (Turban et al., 2002):

- basing the transmission of information on portable devices that user can have with you all the time – mobility,
- basing the transmitted information on wireless channels; user can be available at any place and time – reachable,
- sending multimedia messages thanks to technologically advanced end devices – multimedia,
- sending information based on multidimensional databases containing complete information about the addressee – individualisation,
- transferring a part of the sphere of everyday life into virtual reality with a strong emphasis on continuous access to it – virtualization.

It is worth noting that the more mobile the society becomes, it produces more and more information useful for analysis, which in turn influences the phenomenon of profiling technology users. Distributing knowledge contributes to the creation of global information resources concerning the life of society. Up-to-date information provided from mobile devices allows the shaping of current and future user behavior. The dynamics of growth in the start of services offered by mobile technologies is triumphant. This is mainly visible in the examples of mobile applications for ordering car transport services by associating passengers with drivers using the application where the passenger is located and the payment for the service takes place online, services used to search for communication connections, streaming services, or applications for ordering couriers delivering food to the indicated address.

Currently, mobile devices are the most important for many people because they provide access to information and entertainment wherever the user is, and the time spent using the Internet is constantly increasing. It is also worth noting that the main model of a mobile device is considered to be a smartphone, which combines the functions of a mobile phone and a laptop, in addition, it is very handy and useful. The appearance of smartphones has not changed much, but their software is constantly changing in order to constantly increase the comfort of users and limit the activity of other modern products. Currently, you can find virtually every functionality in smartphones, you only need to download a specialized application. Unfortunately, this is a great risk for the protection of personal data because the user's personal data is not deleted with the subsequent removal of the application.

Indeed, the universality of mobile technologies results from the features that characterize them (Lysik, Machura, 2014):

- portable nature of the devices, small size, lightness of the devices and relatively low price,
- intuitive and simple operation,
- transparency as well as easy and quick operation of the system and applications,

- here and now – thanks to the constant connection to the Internet and current technologies, mobile devices are fast and convenient solutions that allow access to key information regardless of place and time,
- a wide range of applications, allowing to meet the sophisticated needs of users,
- convergence, i.e. the use of more useful functions in one device; the most popular smartphone among generally available mobile technology is not only a telephone, but also a music player, camera, alarm clock, notebook, assistant, calendar or e-mail client, and thanks to the possibility of connecting external modules, e.g. via bluetooth technology, or USB, an ordinary smartphone can become a projector, teleconference set, hands-free set, etc.,
- multimedia character – contemporary solutions affect more than one sense, which increases their attractiveness in the eyes of users.

Thanks to mobile technology solutions, modern society gains many amenities, but is also exposed to many barriers and dangers of use. There is no doubt that mobile devices are much more than just a form of communication these days. This technology is a tool supporting human life every day, constituting its integral part in every aspect of functioning. Mobile devices enable (in addition to the aforementioned communication) the performance of many activities related to movement, work, entertainment, shopping or consumption of goods and services. However, it is important to find a balance in a rapidly changing world and use mobile technologies wisely and only for the right purposes.

3. Social media and effective marketing

Social media is the fastest-growing communication tool on the Internet that connects very closely with mobile devices. Social media are a form of data transfer via websites or applications operating on the Internet in the form of communities created by users of specific websites (Polańska, 2011). Social media is therefore part of virtual media, and their concept was most likely born with the rise of the Internet. Independence, freedom, equality of rights and information character, with the simultaneous use of advanced solutions of information technology, makes it possible for every user of virtual space to exist and express their opinion. It is worth noting, however, that social media, as a component of this type of medium, affect emotional aspects.

The idea of participating in social networking sites, which are the most popular part of social media, is expressed in establishing or maintaining previously established ties with members of a group, e.g. fans of a person, brand, or people sharing common passions. Therefore, social networking sites constitute an online service which, in principle, allows you to present your

own profile to selected users of the portal or all its users. In addition, these websites also allow you to create lists of friends, thus linking a given user with other people (Czubkowska, 2010).

The basic functions of social media include (Mroz, 2010):

- the possibility of presenting a specific person, organization or product through a profile containing data shared with the amount of information appropriate for the user,
- freedom of establishing contacts, exchanging information and maintaining relationships between members of given groups operating in the area of the relevant social network,
- the prospect of publishing, sharing, commenting or rating content shared or sent by other users,
- making it possible to observe and track the activity of members of a given website or social group.

A typical form of social media functioning today are the already mentioned social networks functioning in the best known version, but more and more often they also take the form of blogs, channels or forums oscillating around a specific topic, e.g. business, products and services, social games, travel, or enabling posting and sharing photos, videos and stories.

It should be noted that with the emergence of social networking sites, new opportunities for enterprises have also arisen, resulting from the increased recognition of certain brands, and thus the increase in sales of products and services on the Internet, in line with the principle that every company should be where it is currently potential or regular customers.

Unfortunately, no social media is permanent, but for marketing purposes it is worth paying attention to each media in order to achieve the intended results. There are a large number of social networks in social media that are used for mutual communication and for companies to communicate with their internal or external environment. Each of the websites has unique features that make each website use a specific group of people.

Currently, Facebook remains the most popular social networking site in the world, operating with the Polish language version since 2008. The next places are occupied by the very popular website YouTube, which allows free uploading and rating of original films or with appropriate copyright and approval for distribution, followed by WhatsApp, an application used as an instant messaging app, but more popular abroad (Figure 1).

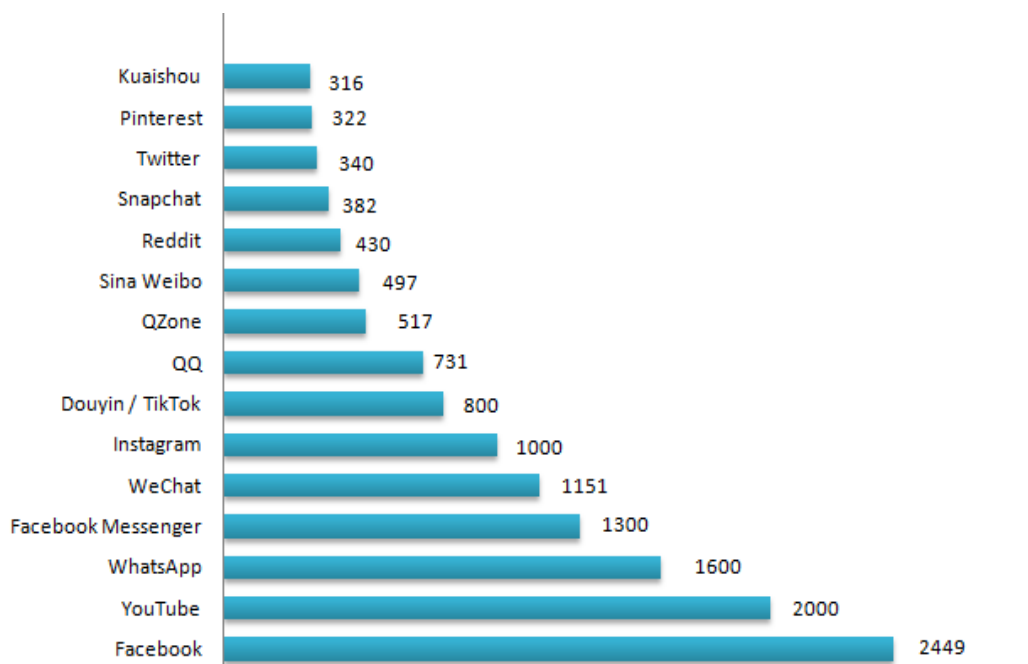


Figure 1. Most popular social networks worldwide in January 2020, ranked by number of active users (in millions). Source: prepared on the basis of <https://socialpress.pl/2020/02/social-media-w-polsce-i-na-swiecie-najnowsze-dane>.

All kinds of applications, apart from individual forms of use, also serve as an advertisement or an opportunity to find out about the market. There are many companies registered on Facebook and other social networks that encourage people to buy a particular product or service. In addition, based on the likes of users, the portal sends website users content thematically similar to their interests, and based on activity, it is able to determine sexual preferences, political and religious views, evaluate property and locate the user, determine marital status, or even indicate the level of education.

The popularity of websites in Poland slightly differs from their frequency of use in comparison to the rest of the world (Figure 2). The most frequently chosen service in Poland is not Facebook, but YouTube. At the end of January 2020, 92% of all Internet users used video service, facebook, which came in second place, by 89%, and the messenger Messenger, which was created by Facebook by 72% of recipients. The differences between the popularity of some websites in Poland and in the world may be caused by the subsequent acquisition of users.

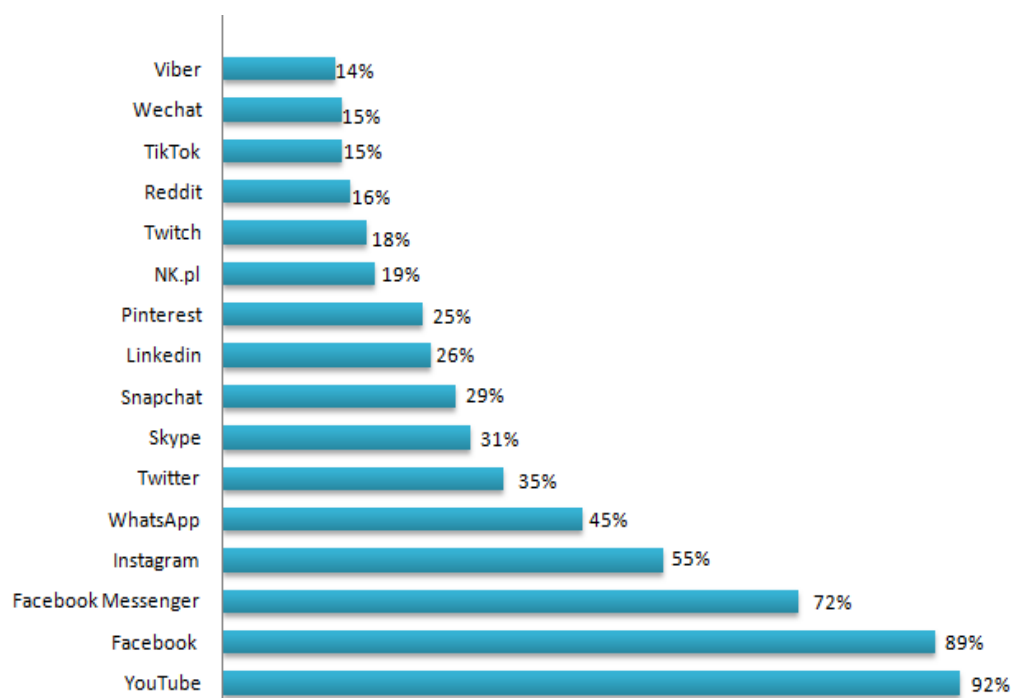


Figure 2. *The most popular social media in Poland in January 2020, ranked by number of active users (in millions).* Source: prepared on the basis of <https://socialpress.pl/2020/02/social-media-w-polsce-i-nawiecie-najnowsze-dane>.

As already mentioned, large enterprises very often use the help of famous people to encourage others to buy a given product or service, or to reach the awareness of new recipients. In turn, small and medium-sized enterprises can profit by encouraging micro influencers to cooperate. It is important to check which people with a large audience are able to influence the opinions and decisions of others, and which influencer has an engaged audience. In order to choose an influencer correctly, it is necessary to analyze the statistics concerning the growth of fans of a given influencer, i.e. purchase of fans and analysis of cooperation, which allows you to check whether the involvement of a given influencer actually allowed for the achievement of specific business goals. The awareness of asking a given influencer to cooperate is undoubtedly important from the point of view of the profits of a particular company. Unfortunately, from the point of view of the recipient, very often famous people, in order to sign new advertising contracts with brands, in order to increase their own wealth, use their position to encourage their fans to buy a product or service.

The market has changed a lot recently as a result of the development and growing popularity of social media. There are audiences who question the authenticity of Internet messages and advertisements and put pressure to choose products and services and trusted influencers more consciously. Unfortunately, there are also buyers of goods who are very naively led by online marketing.

Another way of advertising on the Internet is a strategy that encourages the recipients of given goods and services to share content related to the brand, e.g. photos, videos, location on their social profiles, marking a given brand or company or using a hashtag. The online world becomes a de facto second life for its users, and thus also becomes a place where sellers and

buyers meet. Nowadays, society shares everything on social media, talks, shares insights, recommends brand data or advises against it. The mobile society pays attention to what their friends or idols are currently publishing, where they stand for and what products they use. Today, people are more likely to use products and services that have theoretically been tested by someone than those where their advantages are artificially presented. Additionally, some in order to feel like their idol use the same cosmetics, because they want to identify with this person, illusoryly be closer to her, increase their prestige or satisfy the curiosity of their own organism. Unfortunately, this is how effective but deceptive marketing is created. A user who says or shows a given product is a more authentic promotion for a given recipient than the seller. It is worth noting, however, that very often a person promoting a place, product or service does it only from the aforementioned material premises, in order to maintain popularity, following the current trend, or as a result of addiction to social media.

The rankings of the most popular and most followed web creators in Poland show a huge number of followers. Social media stars with the largest number of fans or subscribers are followed by multi-million audience groups. For Polish influencers, in addition to the total number of followers, popularity is also important in terms of the number of likes, shares, comments, or engagement taking into account the average value of interactions with a single post, as well as the number of visits in the blog. The most engaging influencers in Poland are the influential creators of YouTube, Instagram, TikToka and Blogs. The increased interest in people who influence the environment causes the desire to pursue a profession such as youtuber or social media influencer.

It should be noted that the good impact of such activities can be justified by promoting regular research, encouraging voting, proper nutrition, reducing waste production, and living in harmony with nature. Unfortunately, in many cases, the amount of things and opportunities that the influencer profession offers can cause frustration in other people because of the inability to fulfill the desires that are created by observing famous people. Very often people are not able to understand that an influencer is only a profession where the current image has nothing to do with reality.

By creating a space for influencers, social media gives them the opportunity to cooperate with brands or approval to create their own products. Marketing created in virtual reality makes it possible to create needs among recipients or to find customers who are already able to buy immediately. Influencer stimulates consumption by awakening in its observers or readers an immediate desire to have a given thing. Very often, an influencer has the power to influence as a leader among a given group, which prompts others to follow their style without reflection on various levels of human activity or to repeat the opinions they create.

4. Benefits and threats resulting from the use of mobile devices

The largest social media supported on mobile devices is visited and used by users tirelessly, with monthly user numbers exceeding billions. Social media using mobile technologies make it possible to create and exchange all user-generated content, but their design is done in such a way as to make society more and more addictive.

Mobile technology, and thus social media, is undoubtedly one of the most important elements of the life of social reality, which makes users systematically check the activities of other users on all social networks, as well as share their own entries, photos, videos or reports. This form of information transmission is very popular, and the majority of the society has profiles on popular websites.

The phenomenon of technological mobility in the context of social reality offers a number of opportunities, but is also a source of new threats. The basic advantages of mobile devices include:

- constant and quick access to the desired information,
- direct exchange of information,
- conducting transactions and interactions in real time, no matter where,
- adjusting the content to the user based on the history of viewed websites, channels, portals, places visited in the past, interests based on likes and observations or installed applications,
- the ability to access your own location in order to determine the whereabouts of the user, e.g. to use a transport service or find a destination,
- introducing innovations in various fields of economic activity,
- organization of everyday time thanks to built-in tools,
- communication speed and being online,
- the ability to express yourself,
- access to entertainment and culture,
- the ability to communicate with people on the other side of the globe.

The incredible development of mobile technologies results from the enormous importance of the Internet and the increase in computing power in transistors, which affects the increasing miniaturization of electronic devices and devices, which in the future may be literally everywhere. Therefore, despite the huge popularity of the technology, its disadvantages should not be forgotten:

- paradoxically, despite the many amounts of security, wireless networks that characterize mobile devices are susceptible to attacks,
- the rapid development of technology leads to a reduction in the security of transactions in the mobile space, shared data and login places,
- mobile devices define identity, interests and situations.

More and more often you can observe the trend of leaving information about yourself about spending free time, who the person meets and where, what likes to eat, what music likes to listen to, what to watch, where travels, what currently does, where works, what is his education, what has car, what status, etc. This way he transfers his private life to virtual space. The enormous amount of information about a given user can be used by other users or companies that wish to attract new customers. The use of social networking sites by enterprises offers a great opportunity to create new audiences and the ability to display ads only to users who are likely to be interested in them. Unfortunately, very often such profiling of the Internet user may have negative consequences for him in the future.

5. Summary

Mobile technology and social media play a significant role in people's lives. People using mobile devices make all transactions with these devices, and moreover, they discover themselves through their activity, which in turn opens up new opportunities for companies, but becomes dangerous for users. The Internet is the largest source of knowledge, contacts and currently the cheapest communication tool, and the length of spending time on the Internet is constantly increasing.

All kinds of social media based on technological foundations are changing the way entire organizations, societies and individual individuals communicate and undoubtedly become a direct place of information exchange. However, it is important to find the boundary in order to navigate the virtual world properly so as to avoid losing or compromising your own personal data.

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GREEN BONDS AS MODERN FINANCIAL INSTRUMENTS

Katarzyna ŻAK

University of Economics, Katowice; katarzyna.zak@ue.katowice.pl, ORCID: 0000-0002-9212-7206

Purpose: The purpose of the paper is to present and analyse the development of green bonds issued on the Polish and international market in 2015-2021.

Design/methodology/approach: The research methods used in the paper include the survey of Polish and foreign literature as well as the analysis of data from secondary sources. Desk research analysis was based on numerical data contained in the Climate Bonds Initiative database.

Findings: The result of the conducted research is an indication of trends concerning the development of the green bond market and the main leaders on the international market. The position of Poland as an issuer of this type of securities is presented against this background. **Research limitations/implications:** The presented findings encourage further research to systematize data on green finance in Poland and the issue of green bonds from the point of view of the adopted criteria for their division.

Practical implications: The analysis and assessment of the causes and effects of the issue of green bonds, especially on international markets, should be a kind of leverage to popularize this method of financing pro-ecological projects in Poland, especially among entrepreneurs and local governments.

Social implications: The use of the presented data, analyses and conclusions should imply further actions and strategies of various entities necessary to implement the concept of sustainable development, especially green financing. The implementation of green bonds should result in the development of the capital market on the one hand, and on the other hand, contribute to the effective implementation of pro-ecological projects.

Originality/value: The article synthetically presents the significance of the concept of green finance. It deals with current issues related to green bonds as well as global and domestic trends in their application.

Keywords: green bond, green finance, green economy, environment, ecology.

Category of the paper: General review.

1. Introduction

The prospect of a global ecological crisis, ironically treated a few years ago as catastrophic propaganda by a group of ecologists, is today an important subject of public debate. It begins to be taken for granted by recognized groups of researchers, as well as major political leaders of the modern world, the influential media and the vast majority of the public. Numerous media reports and publications inform about the climate crisis, climate warming, and the catastrophic effects it will have on our civilization. However, attention should be paid to the fact that negative climate change is only part of a larger whole, i.e., the environmental crisis (also known as the ecological crisis). It is most often perceived as an unfavourable result of civilization development. During this development, nature was ruthlessly subordinated to the goals pursued by man. Its consequence is the greenhouse effect, pollution of the natural environment, reduction of biodiversity or depletion of non-renewable natural resources (Bieniok, 2020).

The concept of sustainable development, and especially that part of it, the main goal of which should be an immediate, persistent and constant endeavour to restore and then maintain the balance between man and nature is to be the antidote to the situation that has arisen. The implementation of such an approach is the result of realizing by contemporary societies of the risk caused by an inappropriate, purely utilitarian, non-accountable human attitude towards nature, which was developed in the era of the paradigm of unlimited civilization growth.

In the case of enterprises, the importance of the idea of corporate social responsibility, i.e., the concept of business conduct in which responsible economic development is reconciled with social and environmental issues is growing. This is not an easy task, as it requires changing the current philosophy of running a business and searching for various tools that will support the necessary changes. Green finance and their instruments – green bonds are one of such solutions.

The purpose of the paper is to present and analyse the development of specialized financial instruments in the form of green bonds issued on the Polish and international market in 2015-2021.

The research methods used in the paper include the survey of Polish and foreign literature, as well as the analysis of data from secondary sources. The desk research analysis was based on the numerical data contained in the Climate Bonds Initiative database.

2. The role of green finance

Sustainable development issues are more and more often reflected in documents and recommendations from various conferences, in the strategies of major financial institutions, social organizations, corporations and their activities. Today, the financial sector plays a key role in supporting and implementing the sustainable development policy, directing cash flows to those entities that prepare and implement sustainable development strategies (Caldecott et al., 2014). In addition to economic and social goals, special financial support covers activities aimed at inhibiting the negative effects of the global environmental crisis. As L. Dziawgo (2014) and B. Ryszawska (2020) state, the modern financial market engages in supporting the pro-ecological transformation of society as well as the economy, and is evolving towards "greening", which manifests itself in the development of such "green instruments" as carbon finance, green stimulus funds, microfinancing, green bonds, international and national climate funds, green infrastructure, real estate funds, and socially responsible equity funds. The shift to sustainable development transforms the economy towards a green, low carbon, resource efficient and combating climate change economy. In this context, apart from the concept of sustainable finance, the concept of green finance appears (it should be added that many authors equate and use these terms interchangeably). To fully understand the difference between these concepts, it is important to note what goals they support. Sustainable finance supports sustainable development, while green finance supports the green economy, green growth, low carbon and resource efficiency (Świeszczak, 2020). In the available literature on the subject, there are many different definitions of this concept. Some of them are presented here. At the conference in Davos green finance was defined as any structured financial activity – a product or service – that's been created to ensure a better environmental outcome. It includes an array of loans, debt mechanisms and investments that are used to encourage the development of green projects or minimize the impact on the climate of more regular projects. Or a combination of both. Typical green finance projects concern: renewable energy and energy efficiency, pollution prevention and control, biodiversity conservation, circular economy initiatives and sustainable use of natural resources and land (WEF, 2020). Another by definition states that green finance is a broad term that can refer to financial investments flowing into sustainable development projects and initiatives, environmental products, and policies that encourage the development of a more sustainable economy. Green finance includes climate finance but is not limited to it. It also refers to a wider range of „other environmental objectives, for example industrial pollution control, water sanitation, or biodiversity protection. Mitigation and adaptation finance is specifically related to climate change related activities: mitigation financial flows refer to investments in projects and programs that contribute to reducing or avoiding greenhouse gas emissions (GHGs) whereas adaptation financial flows refer to investments that contribute to reducing the vulnerability of goods and persons to the effects of

climate change (Höhne et al., 2012). According to the definition of U. Volz (2015) green finance comprises all forms of investment or lending that consider environmental impact and enhance environmental sustainability. A key element of GF is sustainable investment and banking, where investment and lending decisions are taken on the basis of environmental screening and risk assessment to meet environmental sustainability standards. On the other hand, for the banking sector, green finance is defined as financial products and services, under the consideration of environmental factors throughout the lending decision making, ex-post monitoring and risk management processes, provided to promote environmentally responsible investments and stimulate low-carbon technologies, projects, industries and businesses (PWC, 2013).

In conclusion, it can be said that the role of green finance is to redirect capital to a green, environmentally sustainable economy and it includes (Kotecki, 2020; Lindenberg, 2014):

- the financing of public and private green investments (including preparatory and capital costs) in the following areas:
 - ✓ environmental goods and services (such as water management or protection of biodiversity and landscapes),
 - ✓ prevention, minimization and compensation of damages to the environment and to the climate (such as energy efficiency or dams);
- the financing of public policies (including operational costs) that encourage the implementation of environmental and environmental-damage mitigation or adaptation projects and initiatives (for example feed-in-tariffs for renewable energies);
- components of the financial system that deal specifically with green investments, such as the Green Climate Fund or financial instruments for green investments (e.g., green bonds and structured green funds), including their specific legal, economic and institutional framework conditions.

3. Green bonds – the issue conceptualisation

In order to finance projects related to the green economy, it is necessary to obtain appropriate funds for this purpose. Green bonds are now one of the most popular instruments of "green" financing. Although they have been present on the market since 2007, their uniform definition has not yet been formulated. Table 1 contains proposals presented by various authors and institutions.

Table 1.*Green bonds – proposals for the definition*

| Authors/Institutions | Definition |
|---|---|
| R. Della Croce, C. Kaminker, F. Stewart | Green bonds are fixed income securities, the intention of which is to use the funds obtained through their issue for financing projects aimed at the development of economy which is low-carbon and resilient to climate change. |
| C. Flammer | Green bonds are innovative securities that are debt instruments. Funds from their issue are allocated to financing low-emission, climate-friendly projects; they are most often issued by corporations, local government units, governments and supranational institutions. |
| J. Fu, S. Li, A.W. Ng | A green bond is a type of bond the proceeds of which should be used to finance or refinance green projects. The authors indicate both standard financing and refinancing, i.e., the transfer of funds to already implemented pro-ecological projects. Such an extension of the definition gives more options for the use of green debt. Moreover, it is directly defined as a type of bond in the financial market. |
| World Bank | Green bonds are debt securities that, apart from their standard financial characteristics (i.e., maturity, coupon interest or price), are distinguished by the environmental purpose of the issue. |
| The International Capital Market Association (ICMA) | Green bonds are all kinds of bonds, the proceeds of which will be used solely for the full or partial financing or refinancing of projects leading to environmental benefits. |

Elaboration based on: (Della Croce et al., 2011), (Flammer, 2019), (Fu et al., 2020), (World Bank, 2015), (International Capital Market Association, 2019).

The fact that green bonds are issued in order to obtain capital for financing/refinancing projects aimed at a positive change in the condition of the natural environment is their basic and at the same time distinguishing feature. They are debt securities that can be described with the use of such parameters as maturity or coupon that are standard for classic bonds. Therefore, it can be said that only the first of the mentioned attributes, i.e., the use of the collected funds specifically for supporting nature, clearly and visibly distinguishes these bonds from their classic equivalents (Laskowska, 2020).

The presence of green bonds on the financial market for the last 14 years caused the emergence of the so-called green bond taxonomy. It represents the regulatory framework for the issuance of these financial instruments. It includes a system of rules and standards that define the Green Bond and its features that provide the investor with a proof of correctness, i.e., certificate stating the environmental purpose of the capital. The use of this framework increases the efficiency, transparency, comparability and credibility of the green bond market and encourages investors to issue and invest in them. The most popular emission standards for these instruments are those developed by the International Capital Market Association (ICMA) and the Climate Bonds Initiative (CBI). A group of technical experts for sustainable finance (TEG *Technical Expert Group*) has also been established in the European Union. Their task is to define the criteria that must be met for a bond to be classified as green (EU GBS – *The European green bond standard*). The proposed standard model defines four basic requirements (European Commission, 2021):

- **Taxonomy-alignment:** The funds raised by the bond should be allocated fully to projects that are aligned with the EU taxonomy.
- **Transparency:** Full transparency on how the bond proceeds are allocated through detailed reporting requirements.
- **External review:** All European green bonds must be checked by an external reviewer to ensure compliance with the Regulation and taxonomy alignment of the funded projects.
- **Supervision by the European Securities Markets Authority (ESMA) of reviewers:** External reviewers providing services to issuers of European green bonds must be registered with and supervised by the ESMA. This will ensure the quality of their services and the reliability of their reviews to protect investors and ensure market integrity.

In Poland, green bonds and their issuance, like any other bond, with the exception of bonds issued by the State Treasury and the National Bank of Poland, are subject to the requirements of the Act on Bonds. The Act determines the rules for the issuance, changes to the terms of issue, sale, purchase and redemption of bonds (Dz.U. [*Journal of Laws*], 2020).

Presenting the typology of green bonds completes the outline of knowledge about them. Table 2 contains the basic classifications of these instruments and the criteria for their distinction.

Table 2.

Classifications of green bonds

| Criterion for differentiation | Types of green bonds |
|---|--|
| Type of issuer | <ul style="list-style-type: none"> – green supranational, quasi-state and agency bonds, – green corporate bonds, – green bonds of the financial sector, – municipal (communal) green bonds, – green treasury (government) bonds. |
| Protection of investors' interests | <ul style="list-style-type: none"> – secured ecological bonds, – unsecured green bonds, |
| Emission certification | <ul style="list-style-type: none"> – green certified (marked) bonds, – green uncertified (unmarked) bonds. |
| A type of venture financed by green bonds | <ul style="list-style-type: none"> – Renewable energy (wind, solar, hydro, biomass), – Transportation (low-emission, rail, electric vehicles, alternative fuel), – Water (modernization of infrastructure, sewage treatment, desalination, fisheries and aquaculture), – Waste and pollution (recycling, composting, circular economy, carbon sequestration), – Construction and industry (green construction industry, energy capturing systems, heat recovery, energy efficiency), – Agriculture and forestry (afforestation, remediation, organic farming, sustainable supply chain). |

Elaboration based on: (Laskowska, 2020).

4. Green bonds in the perspective of statistical data - a synthetic approach

Currently, green bonds are used all over the world. It has been 14 years since the first were issued by the European Investment Bank (EIB) (Laskowska, 2019). Based on the statistical database collected by the Climate Bonds Initiative, the increasing global value of green bonds has been observed year by year (Fig. 1). In 2020, their value was almost six and a half times higher in comparison with 2015. Also, the data for the first half of 2021 suggest that at the end of December another record value will be achieved, as their global value at the end of June 2021 already accounted for nearly 80% of the value of the previous year.

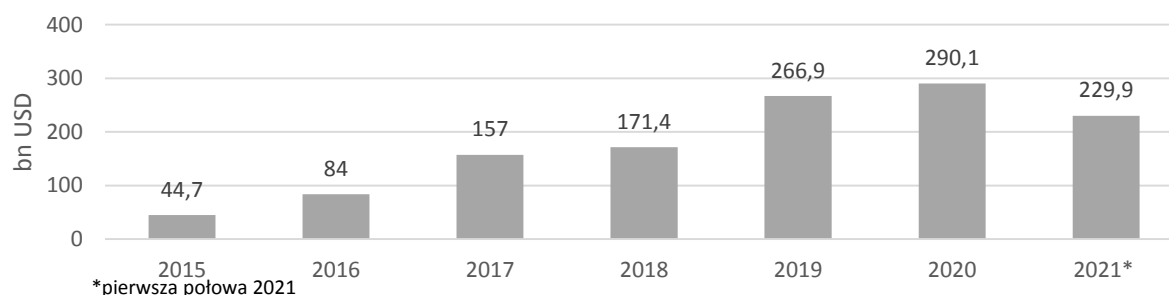


Figure 1. Global value of green bonds in 2015-2021. Source: Climate Bonds Initiative.

As of 2007, the global cumulative value of green bonds is USD 1,303.3 billion. When referring the issue of green bonds to various regions of the world, it should be noted that their highest cumulative value is held by European countries (USD 690.4 billion) as well as the USA and Canada (USD 394.7 billion), while they appear to a very limited extent in the African countries, where this value is estimated at USD 104.3 billion. A similar trend can be observed when analysing the successive years. For example, in 2020 Europe is the leader with USD 156 billion, North America comes second with USD 61.5 billion, Asia Pacific ranks third with USD 53.2 billion, and finally Latin America with USD 7.9 billion. African countries have a relatively small value, i.e., USD 1.2 billion. Considering the level of economic development, it can be concluded that 80% of green bonds are related to developed markets and 16% to emerging markets. It is estimated that currently the cumulative global value of supranational green bonds constitutes 7.7% of their total value, and this share is diverse in the subsequent years of the analysis. The main issuers of green bonds on the global market represent non-financial corporations, financial corporations and government-backed entities, which respectively account for 21%, 20% and 15% of the cumulative value of these instruments. It should be added that in 2020 the value of issuance in the public sector increased, while in the private sector it remained unchanged. This results from the fact that public sector issuers are typically less vulnerable to market dynamics (due to COVID-19) because they tend to have long-term investment plans in place. Green bonds are used to finance ventures in various fields. Considering the total amounts obtained from their issue, the largest funds have been allocated to Energy (USD 1,903 billion), Buildings (USD 1,420 bn) and Transportation (USD 997 bn). Nearly 80% of the obtained funds were spent on these three sectors (Fig. 2).

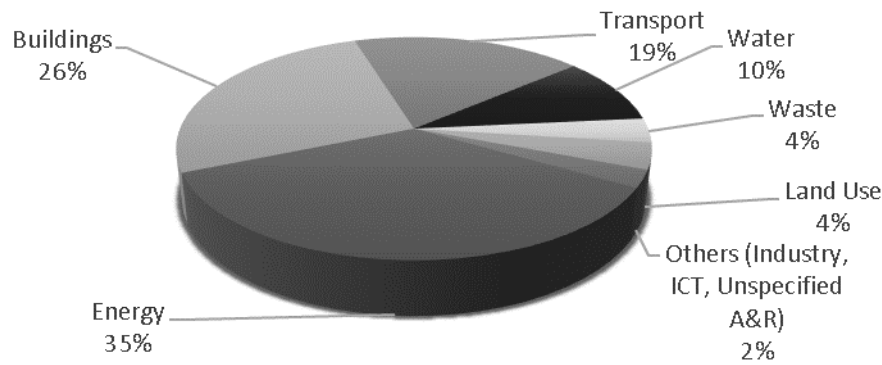


Figure 2. Global cumulative value of green bonds by type of financed enterprise. Source: Climate Bonds Initiative.

Many countries in Europe issue green bonds now, but their cumulative value significantly differentiates them. France and Germany, whose cumulative value of these financial instruments at the end of the first half of 2021 amounted to USD 148 billion and USD 122.4 billion respectively, are undisputed leaders here (Fig. 3). They are followed by the Netherlands (USD 65.8 billion), Sweden (USD 54.1 billion) and Spain (USD 47.4 billion). Poland, with USD 5.9 billion, is much lower in this ranking, close to Austria (USD 6.2 billion) on one side and Switzerland (USD 5.9 billion) on the other.

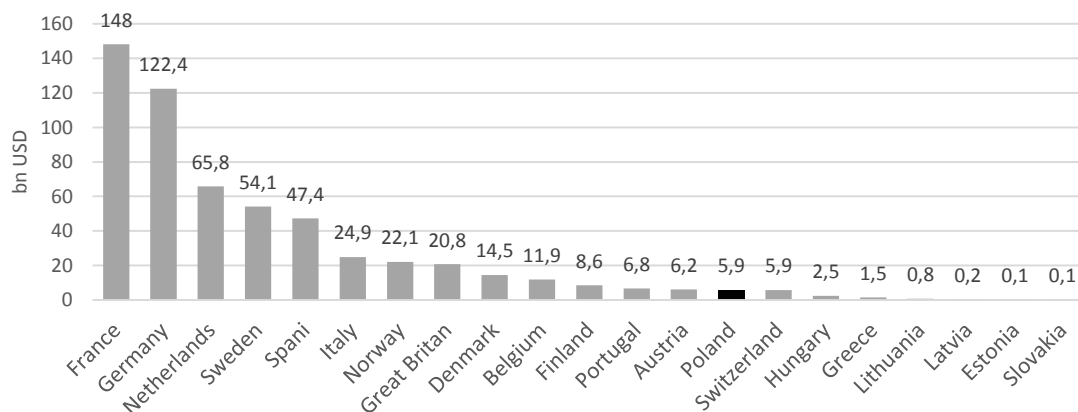


Figure 3. Cumulative value of green bonds in selected European countries. Source: Climate Bonds Initiative.

The main issuers of green bonds on the European market are non-financial corporations, government-backed entities and financial corporations, which respectively account for 25%, 22% and 21% of the cumulative value of these instruments. Development Bank (8%) and Sovereign (16%) also have a significant share. The share of such issuers as local government or ABS (Asset-backed security) does not exceed 1%.

As at the global level, also in Europe three main areas financed from "green" emissions can be indicated. 79% of the obtained funds have been spent on them so far. They include Energy (USD 2,284 billion), Buildings (USD 1,704 billion) and Transportation (USD 1,197 billion).

Poland, like many other countries in Europe, has issued green bonds. Based on the statistical database collected by the Climate Bonds Initiative, it can be concluded that their cumulative value at the end of the first half of 2021 was USD 5.9 billion, although their level was different in the subsequent years of the analysis (Fig. 4).

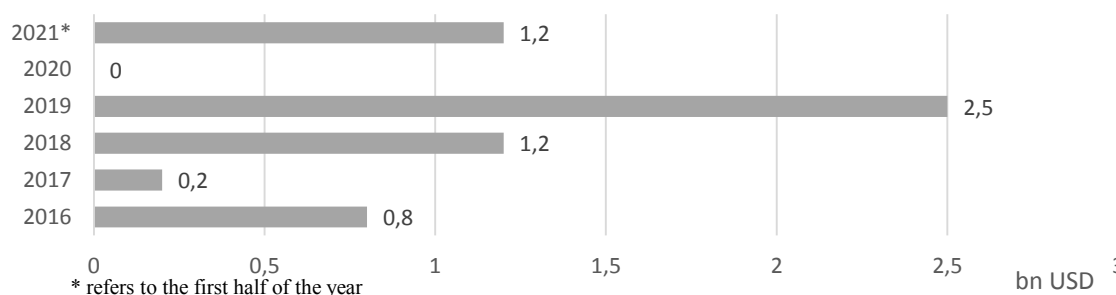


Figure 4. The value of green bonds issued in Poland in 2016-2021. Source: Climate Bonds Initiative.

The first Polish green bonds appeared in 2016, and their issuer was the government. By issuing green treasury bonds, Poland became a precursor in this area. Similar activities were soon implemented by such countries as France, Fiji, Nigeria, Indonesia, Belgium, Lithuania, Ireland, Seychelles, the Netherlands, Hong Kong and Chile (OECD, 2018). Due to the fact that "green" financing is gaining more and more interest - new government issues have appeared. Their synthetic characteristics is presented in Table 3.

Table 3.
Characteristics of green treasury bonds in Poland

| Specification | Emission | | | |
|--|---|---|---|------------|
| | 20.12.2016 | 7.02.2018 | 28.02.2019 | 28.02.2019 |
| Tenor (years) | 5 | 8 | 10 | 30 |
| Coupon (%) | 0.50 | 1.125 | 1.00 | 2.00 |
| Re-offer yield (%) | 0.634 | 1.153 | 1.06 | 2.07 |
| Size (nominal value) | 750 m EUR | 1 bn EUR | 1.5 bn EUR | 500 m EUR |
| Demand from investors | 1.5 bn EUR | 3.25 bn EUR | 3.5 bn EUR | 1.3 bn EUR |
| Sectorial distribution of the proceeds | Sustainable Agricultural Operations (39%), Clean Transportation (32%), Renewable Energy (21%), others (8%). | Clean Transportation (77%), Sustainable Agricultural Operations (8%), Renewable Energy (7%), others (8%). | Clean Transportation (65%), Sustainable Agricultural Operations (17%), Renewable Energy (12%), others (6%). | |

Source: elaboration based on: (Ministry of Finance, 2017), (Ministry of Finance, 2019), (Ministry of Finance, 2020).

The bonds are listed on the Luxembourg Stock Exchange on the dedicated green platform – Luxembourg Green Exchange. Analysing the data shown in Table 3, it can be concluded that each time the demand for Polish green treasury bonds definitely exceeded the offered volume of the issues. The success, which was a great interest on the part of bondholders, mainly foreign ones, and positive assessments of rating agencies, resulted in four such issues by the Polish Ministry of Finance. Funds from their emission are primarily directed to projects related to Sustainable Agricultural Operations, Clean Transportation and Renewable Energy. What is left, is used for funding in such areas as: National Parks, afforestation and reclamation of heaps.

Green bonds of the financial sector are another example of "green" financing in Poland. In 2017, Bank Zachodni WBK (Santander Consumer Bank) launched bonds of ecological profile. It should be mentioned that it was the first case of a green bond issue in Poland by a commercial bank. Subsequent transactions of this type were performed by PKO Bank Hipoteczny and ING Bank Hipoteczny. However, in this case, they were green covered bonds that were the subject of the actions and not strictly green bonds. In Poland, these instruments may only be issued by mortgage banks and Bank Gospodarstwa Krajowego (Stenitzer, 2020).

It is worth adding that all the cited securities have an official green label, i.e., they can be considered Polish green marked bonds.

Yet another example of the issue of green bonds in Poland are those issued by local governments. In 2020, Grudziądz was the first Polish city that obtained finance (PLN 63.2 million) for environmental protection investments in the water and sewage category through the issue of green bonds. Łódź is another city that plans to issue green local government bonds in 2021. The value of the issue is PLN 50 million, which is to be allocated to investments in a low-emission economy and the development of sustainable water and sewage management (uml.lodz.pl).

Grupa Cyfrowy Polsat S.A. operating in the field of telecommunications, new technologies and media is a positive example of the implementation of green corporate bonds in Poland. Green Bonds of Cyfrowy Polsat S.A. were issued in January 2020. The purpose of the issue was to refinance the costs incurred by the capital group in 2017-2019 that were related to their improvement of energy efficiency and reduction of the use of electronic components, and, as a result, reduction of the carbon footprint. The bonds are listed on the Warsaw Stock Exchange, on the Catalyst market. The bonds themselves have not been assigned any ratings. On the other hand, at the time of issuing the Green Bonds, Cyfrowy Polsat S.A. Group had the following ratings: Ba1 (stable) granted by the Moody's Investors Service rating agency and BB+ (positive) granted by S&P Global Ratings (Grabowski, Kotecki, 2020). Other companies that decided to issue green financial instruments include, for example, PKN ORLEN or New Energy Investments Sp. z o.o. It might seem that entities related to, for example, the energy sector should be especially interested in obtaining funds from green bonds. Meanwhile, as part of a survey conducted by the smart-grids.pl portal, representatives of four energy companies: PGE Polska Grupa Energetyczna SA, Enea SA, Energa SA, Innogy Stoen Operator, answered in a direct or slightly veiled manner that they were not interested in such projects (smart-grids.pl)

5. Conclusions

Today there is no need to convince anyone that we have a global ecological crisis. The effects of climate and environmental change can be disastrous. Many ecologists and scientists including the Nobel Prize winner in economics – J. Stiglitz (2004) are sounding the alarm. He believes that comparing the imminent climate crisis to a global world war is fully justified. In his opinion, the effects of climate change will not resemble anything that humanity has experienced so far. They will be huge, incalculable and tragic for the whole world. Our planet is calling for help like never before, while businessmen, politicians and most of ordinary people do not care about that. Probably when they start doing this, it will not matter anymore.

Despite such a pessimistic opinion, many international organizations (e.g., the UN-Paris Agreement on limiting the threats of climate change or the European Union and the European Green Deal it prepared), governments of various countries, institutions and economic entities make efforts to ensure a better result of limiting environmental changes. The concept of green finance, which may take the form of green loans or capital market products, such as green bonds or green capital investments are an example of such initiatives. Green finances are not a seasonal fashion, but a permanent and irreversible trend in global finances.

The green bond market is a response to the growing needs in the field of pro-ecological investments. As the presented data show, we are observing its dynamic development. On the one hand, it is, unfortunately, a signal of the deteriorating environmental conditions for sustainable development and the need to eliminate the effects of climate and environmental changes, and on the other hand, the growing needs for new investments meeting pro-ecological criteria.

The article highlights the fact that green bonds are usually defined by reference to what they finance, i.e., investments in green technologies, activities and projects, and not by what they achieve, i.e., what their real impact is. Failure to measure this impact on obtaining positive changes in the state of the natural environment may result in "greenwashing". The defined standards of green bonds are to prevent this negative phenomenon. Establishing and common use of the so-called green taxonomy, incorporating green preferences in investment advice, extending the scope of disclosures and integrating sustainability into the rating agencies' methodology is the most important action preventing greenwashing. In particular, the taxonomy is intended to help investors identify sustainable investments and ensure their credibility. It also allows to identify entities that really care about the environment and distinguish them from those that only pretend to care for the environment (De Jong et al., 2019).

On the other hand, the undoubted advantages of green bonds include (Grabowski, Kotecki, 2020):

- A large variety of issuers and buyers – and thus expanding the sources of funding and potentially limiting fluctuations in demand for bonds.
- Growing demand from investors leading to oversubscription and an increase in the volume of issues.
- Reputational benefits of the issuer.
- Increased credibility of the issuer's sustainable development strategy leading to strengthening the dialogue with investors.
- Tracking the use of impacts and reporting can lead to the improvement of internal management structures through better communication and knowledge sharing between the party responsible for the project and the party managing finances.

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REVIEWERS

Prof. **Tadeusz GALANC**, College of Management Edukacja, Poland

PhD **Michaline GREBSKI**, Northampton Community College, USA

Prof. **Wiesław GREBSKI**, The Pennsylvania State University, USA

Prof. **Ireneusz JOŹWIAK**, Wrocław University of Technology, Poland

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