

POLITECHNIKA ŚLĄSKA

SILESIA UNIVERSITY OF TECHNOLOGY

ZESZYTY NAUKOWE

SCIENTIFIC PAPERS

ORGANIZACJA I ZARZĄDZANIE
Zeszyt Naukowy nr 174

ORGANIZATION AND MANAGEMENT
Scientific Paper no. 174

Pod redakcją
Bożeny SKOTNICKIEJ-ZASADZIEN
Radosława WOLNIAKA

Edited by
Bożena SKOTNICKA-ZASADZIEN
Radosław WOLNIAK

GLIWICE 2023

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
ISSN 2720-751X**

© Copyright by
Wydawnictwo Politechniki Śląskiej
Gliwice 2023

**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**

CONTENTS

Foreword	5
1. Małgorzata MICHALCEWICZ-KANIOWSKA, Małgorzata ZAJDEL – Integrated territorial investments as an example of measures for sustainable territorial development	7
2. Małgorzata MICHALCEWICZ-KANIOWSKA, Małgorzata ZAJDEL – Sources of competitive advantage for enterprises in the TFL industry – case study	17
3. Marta MISZCZAK – Internal communication in enterprises located in Poland with the use of means of electronic communication – research findings	31
4. Teresa MIŚ – Effects of investment funding from regional operational programmes (as illustrated by the ROP of the Podkarpackie voivodeship 2014-2020)	45
5. Ada NAWROCKA – Operational urban planning – Zone d'Aménagement Concerté ..	59
6. Tomasz NOGA – The use of chatbots and voicebots by public institutions in the communication process with clients	69
7. Benedykt OPALKA – Financing investments in the regional structure in the face of crisis phenomena in Poland	81
8. Aneta PARKER, Marzena KACPRZAK, Izabela WIELEWSKA – Changes in strategic responses of selected low budget airlines from different continents in response to the global Covid-19 pandemic	99
9. Krzysztof PASEK – The impact of operational and innovative management on the creation of corporate social responsibility in the logistics industry	113
10. Katarzyna PAWLAK – City tourism application functionality from the perspective of tourist experience and technology acceptance models	131
11. Elżbieta PIERZGALSKA, Kamil REZMER, Iwona KOBUSIŃSKA – Introduction of a new French beer brand on the Polish market in the opinion of consumers	153
12. Jarosław POTERAŁSKI – SME's competitiveness as the ERDF's priority for the support of regional development – evaluation of the Polish experience	169
13. Agnieszka PREDYGIER – Promotion management of the region on the example of selected local initiatives	181
14. Anetta PUKAS – Dynamic capabilities in territorial marketing – the possibilities of concept adaptation	191
15. Katarzyna RADECKA – Social media in the public relations strategy of the cities of Kujawsko-Pomorskie voivodeship	207
16. Robert ROMANOWSKI, Wojciech KISIAŁA, Bartosz STEPIŃSKI – The impact of EU structural funds related to innovation in socio-economic development at a local level	217
17. Wawrzyniec RUDOLF, Elham CHERAGHI, Marta OLASIK – The European capital of culture as a marketing mega-event: the challenge of getting nominated	233

18. Anna SIBIŃSKA, Wioletta KRAWIEC – Creating shared value (CSV) measurement tool: conceptualizing the construct and its dimensions	255
19. Marcin SKINDER, Żaneta SKINDER – Reform trends in Europe's higher education programmes as an exemplification of the bologna process after the Rome 2020 Ministerial Conference	275
20. Waldemar SŁUGOCKI – Evolution or status quo - regional operational programmes in the Eu financial perspective 2014-2020	285
21. Agata STANDO, Robert ROMANOWSKI, Olesia MAIEROVÁ – Preferences of customers in accordance with sensitivity to narrative criterion in film and literary tourism	297
22. Tomasz SURMACZ, Wiesław SZOPIŃSKI – Overview of supply chain management challenges	315
23. Aleksandra SZTUK – Cities' attractiveness factors from the perspective of digital nomads	323
24. Andrzej SZYMKOWIAK, Robert ROMANOWSKI, Jakub ŁACH – Influence of ethnocentric attitudes towards tequila attributes related to country of origin effect	337
25. Jolanta TARAPATA – Marketing communication of modern enterprises in the era of digital economy	355
26. Arkadiusz TUZIAK – Socio-institutional conditions and the development and competitiveness of the region	371
27. Małgorzata WIŚCICKA-FERNANDO, Konrad BIERCEWICZ – Using high-tech tools for consumer buying decisions of FMCG	387
28. Katarzyna WŁODARCZYK, Agata GÓRSKA – Influencer marketing in brand competitiveness building (case of Baltic Natur Park)	403
29. Mariusz WOŹNIAKOWSKI – Evolution of the use of social media by the local governments of the Lodzkie voivodship	417
30. Mateusz ZACZYK – The concept of a decentralized autonomous organization as an innovative organizational structure	431
31. Michał ZASADZIEN – Analysis of qualifications in vocational secondary schools in the aspects of Industry 4.0 development	447

FOREWORD

Presented number of Silesian University of Technology. Scientific Papers. Organization and Management Series. Contemporary management. Presented papers contain result of researches conducted by various universities from Poland. The number consists of 31 papers.

The papers presented in the number concentrate on many topics connected with organization and management. There are in the number papers about: sustainable development, information management, public management, economics, impact of COVID-19 pandemic on management, innovation management, tourism management, SME's management, marketing, organizational culture, supply chain management, digital economy, Smart City, competitiveness, Industry 4.0.

*Bożena Skotnicka-Zasadzień
Radosław Wolniak*

INTEGRATED TERRITORIAL INVESTMENTS AS AN EXAMPLE OF MEASURES FOR SUSTAINABLE TERRITORIAL DEVELOPMENT

Małgorzata MICHALCEWICZ-KANIOWSKA^{1*}, Małgorzata ZAJDEL²

¹ Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz; malgosia@pbs.edu.pl, ORCID: 0000-0003-2154-5838

² Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz; m.zajdel@pbs.edu.pl, ORCID: 0000-0003-4535-2897

* Correspondence author

Purpose: The aim of the study is to present the principles of Integrated Territorial Investments (ITI)¹ functioning on the example of the Bydgoszcz and Toruń Functional Area (BTFA)². An attempt has also been made to identify the barriers and limitations, including the areas requiring additional support, in the implementation of projects. The study shows that the ITI instrument is effectively implemented under the current financial perspective 2014-2020 and should be maintained in the financial perspective 2021-2027.

Design/methodology/approach: The survey was conducted among employees of the Integrated Territorial Investments Office, with a specific purpose of an attempted assessment of whether the ITI instrument has been programmed well at the national level, including evaluation of the ways in which it has been managed and implemented by the Integrated Territorial Investments for the Bydgoszcz and Toruń Functional Area (ITI BTFA)³ partnership. The subject of the study entailed the Integrated Territorial Investments instrument, as a tool for territorial development in Poland. The object of the study was the ITI BTFA partnership, comprising two core cities: the City of Bydgoszcz and the City of Toruń, as well as 23 municipalities in the functional area.

Findings: Integrated Territorial Investments (ITI) is an important instrument of territorial development, constituting a well-utilized tool of local government cooperation, co-financed by the European Union. The instrument strengthens the impact of jointly implemented projects, through an approach extending beyond the administrative boundaries of a given local government. Integrated Territorial Investments are an important tool allowing implementation of the territorial strategies of the 2014-2020 programming period, primarily in the area of integrated actions for sustainable urban development.

Originality/value: The article presents the research results arising from the survey conducted at the organization analyzed. The study indicated that the ITI partnership management system is effective, as it has allowed improvement in the efficiency of the activities undertaken as well as increased trust among the partners involved. The main factors which affected the effectiveness of the projects implemented by the ITI BTFA included: good rapport with the

¹ Polish: Zintegrowane Inwestycje Terytorialne (ZIT).

² Polish: Bydgosko-Toruński Obszar Funkcjonalny (BTOF).

³ Polish: Zintegrowane Inwestycje Terytorialne dla Bydgosko-Toruńskiego Obszaru Funkcjonalnego (ZIT BTOF).

beneficiary, cooperation of the ITI Intermediate Body with the Managing Authority of the Kuyavian-Pomeranian Voivodeship Regional Operational Program⁴, and ongoing monitoring.

Keywords: regional policy, Integrated Territorial Investments, functional areas.

Category of the paper: Case study.

1. Introduction

Integrated Territorial Investments (ITI) constitutes a very important instrument of territorial development, introduced by the European Commission for the period of 2014-2020, addressed to provincial cities and their urban areas. It is conditional, however, on the establishment of an Integrated Territorial Investment Partnership, preparation and adoption of an ITI Strategy, and a signing of a relevant agreement. It is worth noting that, besides Poland, the instrument has been also implemented in fourteen EU countries: Belgium, Germany, Greece, Spain, Finland, France, Italy, Lithuania, Portugal, Romania, Sweden, Slovakia, and United Kingdom (as a member of the Union, at the time). The legal basis for the introduction of Integrated Territorial Investments, at the European Union level, has been provided by three regulations of the EU Parliament and Council of December 17, 2013: 1303/2013 (Article 36 and Article 123) (Regulation 1303/2013) 1301/2013 (Article 7) (Regulation 1301/2013), 1304/2013 (Article 12) (Regulation 1304/2013). The most important national ITI programmatic documents of strategic and operational nature, which cover the time horizon of the European Union financial perspective 2014-2020 include: the Partnership Agreement signed by the European Commission on May 23, 2014; the Act of July 11, 2014 on the principles of cohesion policy program implementation financed under the financial perspective 2014-2020 (the so-called Implementation Act) (Journal of Laws 2014 item 1146.); the National Urban Policy of October 20, 2015 (Resolution No. 198, M.P.⁵ 2015, item 1235); the Concept of Spatial Management of the Country 2030 of December 13, 2011 (Resolution No. 239, M.P. 2012, item 252), the National Strategy for Regional Development 2010-2020 (NSRD) of July 13, 2010 (M.P. 2011, No. 36, item 423); and the Ministry of Regional Development's Guidelines - Principles of ITI Implementation in Poland of July 2013 (MRR⁶, 2013).

The strategic objectives of ITI implementation entail: the strengthening of an integrated territorial approach, promotion of a partnership model of cooperation within urban functional areas, implementation of integrated projects comprehensively addressing the needs and problems of cities, increased impact of urban functional areas on the implementation of cohesion policy, support of local development through implementation of the most crucial

⁴ Polish: Regionalny Program Operacyjny Województwa Kujawsko-Pomorskiego (RPO WK-P).

⁵ M.P. stands for Monitor Polski, the Official Gazette of the Government of the Republic of Poland.

⁶ MMR stands for the Ministry of Regional Development [Polish: Ministerstwo Rozwoju Regionalnego].

investments, as well as more accurate adaptation of the European Union aid funds, in relation to the needs and potentials of individual types of regions in Poland (Gwizda, Kosewska-Kwaśny, Żółciński, 2014).

Realization of these objectives, however, is directly related to the priority investment policy of the European Union, i.e., the cohesion policy encompassing the territorial dimension. It ensures utilization of the territorial potentials, and thus provides for elimination of barriers to the development of the specific areas of the voivodeship which intervention activities are envisaged in. This, in turn, allows more efficient use of resources and deficit leveling (RPO⁷, item 1589, 2022). During the 2014-2020 programming period, 17 provincial ITIs have been under implementation in Poland. In 2014, based on an agreement (ZIT, 2014), an Integrated Territorial Investments partnership for the Bydgoszcz and Toruń Functional Area (hereinafter ITI BTFA) was established in the Kuyavian-Pomeranian Voivodeship. The partnership comprises of a total of 25 local government units, which have developed and are implementing the ITI Strategy. The receipt of funds is subject to certain conditions, which include development of a strategy for a given area, or establishment, by individual Local Government Units, of a partnership and acquisition of an adequate institutional capacity. Under the Regional Operational Program of the Kuyavian-Pomeranian Voivodeship, an allocation of approximately EUR 166 million has been set for the implementation of the 2014-2020 ITI BTFA. The largest amount of ITI implementation funds was planned in the Silesian Voivodeship (EUR 484 million), while the smallest - in the Warmian-Masurian Voivodeship (EUR 45.2 million) (Fig. 1).

To date, the ITI instrument, as a new EU policy tool, has not yet been subjected to detailed research, while one of the national-level studies was the 2018 evaluative study "Ewaluacja systemu realizacji instrumentu ZIT" (Evaluation of the ITI instrument implementation system), which allowed assessment of whether the ITI instrument has been properly programmed, both at the EU and the national levels. The article aims to present the principles of the Integrated Territorial Investments for the Bydgoszcz and Toruń Functional Area's functioning as a tool for territorial development, as well as identify the barriers and limitations, including areas requiring additional support, in the implementation of projects. The ITI BTFA partnership, as the Intermediate Body under Agreement No. RR-VII-T.041.13.2015, has been responsible for rational spending of these funds.

⁷ RPO stands for Regional Operational Program [Polish: Regionalny Program Operacyjny].

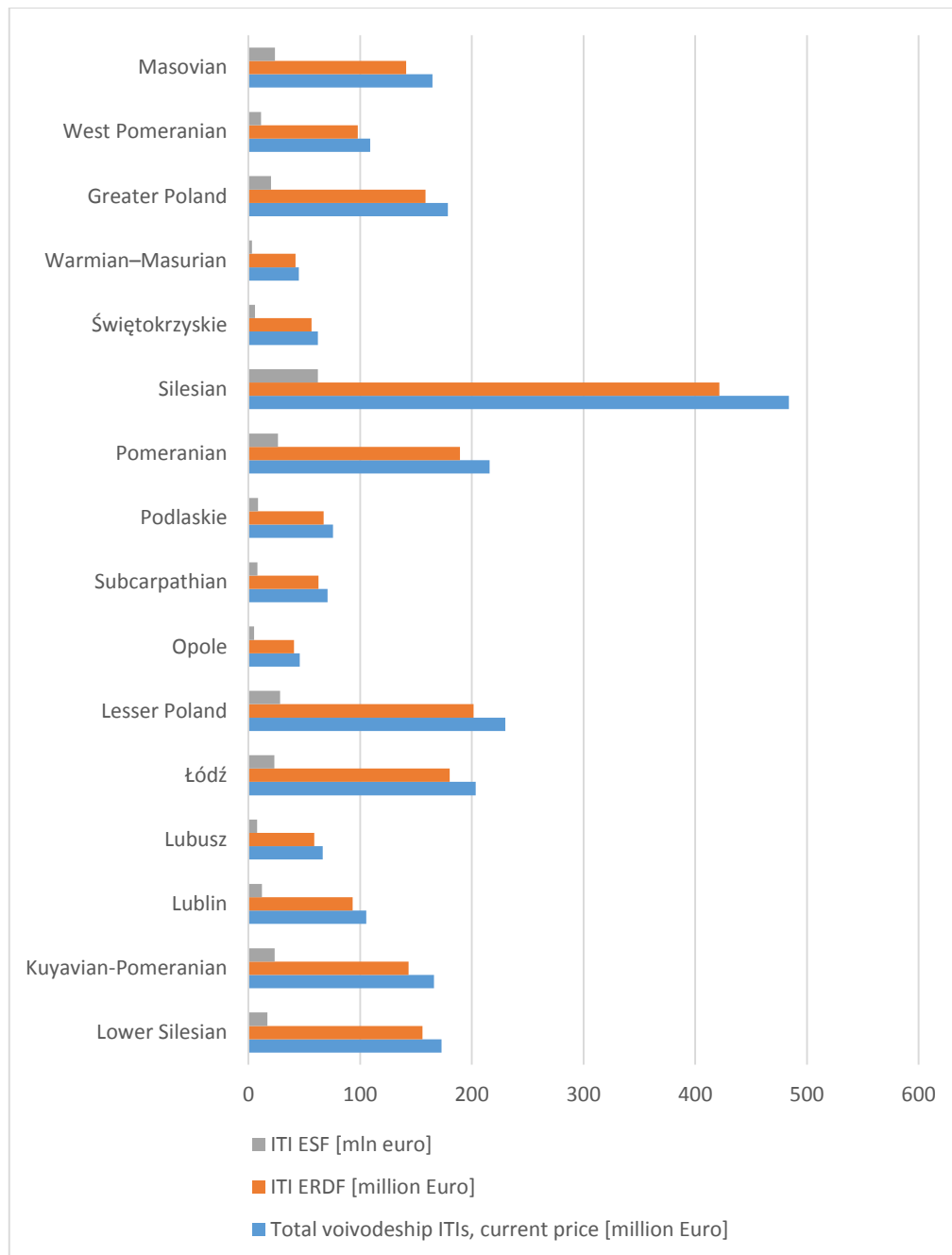


Figure 1. Estimated financial resources for implementation of Integrated Territorial Investments, by voivodeship.

Source: Financial perspective 2014-2020 programming - Partnership Agreement, Ministry of Infrastructure and Development, Warsaw 2014, p. 213.

2. Research methodology

The subject of the study is the Integrated Territorial Investments as a tool for territorial development in Poland, primarily concerning integrated actions for sustainable urban development, through which territorial strategies have been implemented in the 2014-2020

programming period. The specific study objective entails an attempted assessment of whether the ITI instrument has been programmed well at the national level, including evaluation of the ways in which it has been managed and implemented by the ITI BTFA partnership. The object of the study is the ITI BTFA partnership encompassing two core cities: the City of Bydgoszcz and the City of Toruń, including 23 municipalities within the functional area. The study covered the Department coordinating the ITI implementation. The ITI Office operates within the organizational structure of the Bydgoszcz City Hall and is responsible for efficient implementation of the tasks entrusted to the ITI Intermediate Body (ITI IB) by the Managing Authority of the Kuyavian-Pomeranian Voivodeship Regional Operational Program (MA ROP K-PV)⁸.

As part of the study, interviews were conducted with the substantive staff of the ITI BTFA Office, using an interview questionnaire consisting of 14 open-ended questions as the research tool. The ITI Office has nine employees, who possess relevant qualifications and three-year experience in the implementation of EU projects.

3. Research results

The ultimate area of intervention under the ITI BTFA was determined on the basis of, among other things, the delimitation process based on detailed analyses of indicators, described in a separate document, which specified that all Territorial Government Units expressing their willingness to be part of the ITI BTFA partnership shall fulfill the imposed criteria of linkage to the core cities (expressed by an appropriate value of indicators) (Delimitacja, 2022). According to ITI Office staff (63%), the delimitation of the Bydgoszcz and Toruń functional area was carried out properly.

The respondents pointed to, *inter alia*, the integration of the area as well as support and exchange of experience in their justifications. According to 37% of the Office employees, the Bydgoszcz and Toruń area delimited was too large, and the delimitation imposed by the Ministry of Finance and Regional Policy was not fully accurate, due to the fact that the municipalities in the Toruń part of the area do not exactly share social, economic interconnections with the Bydgoszcz area municipalities. All the ITI Office employees surveyed concluded that all the Integrated Territorial Investments Intermediate Bodies in the country have performed, at the very least, the minimum mandatory scope of the 2014-2020 financial perspective tasks. Similarly, all the surveyed stated that the project selection criteria for the ITI-dedicated allocation were co-drafted by the ITI BTFA Office and the ITI municipal coordinators.

⁸ Polish: Instytucja zarządzająca Regionalnym Programem Operacyjnym Województwa Kujawsko-Pomorskiego (IZ RPO WK-P).

Subsequently, as part of the ITI IB and working meetings of and MA ROP K-PV, draft criteria were developed. The joint (IP ZIT and MA ROP K-PV) draft criteria were approved by the Kuyavian-Pomeranian Voivodeship Board and were adopted by the ITI Working Group operating at the 2014-2020 ROP K-PV Monitoring Committee. At the next stage, the proposal criteria developed by the ITI Working Group were reviewed by the ITI BTFA Board. Ultimately, a resolution on the adoption of project selection criteria was passed by the 2014-2020 ROP K-PV Monitoring Committee. All ITI Office employees stated that participation in the criteria drafting, in terms of strategic assessment particularly, involved participation of the ITI IB in the activities of the ITI Working Group at the 2014-2020 ROP K-PV Monitoring Committee regarding project selection criteria (in competition and non-competition mode) co-drafting. The ITI IB additionally participated in the voting on the resolution of the Monitoring Committee on the approval of the project selection criteria. According to the respondents, the strategic assessment of the projects co-financed from the ESF funds was carried out by persons holding a certificate confirming participation in a mandatory training program. The vast majority of the ITI Office employees (75%) believe that the applied manner and tools of ITI strategy monitoring and implementation proved to be effective. In terms of the possibility of generating reports on the monitoring of implemented projects (e.g., the value of signed grant agreements, the value of submitted and approved payment applications, the degree of performance framework indicator achievement), the surveyed assessed the ITI strategy monitoring and implementation tools introduced, i.e., the SL2014 information and communication technology system, positively. 25% of the ITI BTFA Office employees indicated that monitoring could be improved with another, more advanced IT tool. Also 25% of the ITI Office staff believe that a more sophisticated IT tool could serve as a good means of improving the ongoing monitoring of project implementation in 2014-2020. Half of the ITI Office employees (50%) believe that all activities dedicated to territorial policy have addressed the problems diagnosed in the ITI Strategy, which included, inter alia, urban mobility, construction of bicycle routes in particular, revitalization, general and vocational education. The same number of the ITI Office employees believe that the actions dedicated to territorial policy only partially addressed the problems diagnosed in ITI BTFA area local government units. The problem areas most often indicated by the ITI Office employees surveyed, which have not been included in the territorial policy, pertain to entrepreneurship and roads (27%), tourism and senior citizen policy (13%), waste management (7%). The measures dominant in the territorial policy, as indicated by the respondents, include thermo-modernization (96 signed agreements with funding of more than PLN 154 million), sustainable urban mobility (49 signed agreements with funding of almost PLN 245.5 million), and revitalization (54 signed agreements with funding of PLN 114 million), respectively. The ITI BTFA Office staff additionally indicated a range of factors which were influential on the achieved effectiveness level of the projects implemented under the territorial policy. The majority of the respondents stated that the most important factor affecting the effectiveness

of the projects entailed good rapport with the beneficiaries (25%). Among the factors affecting the achieved level of project effectiveness, 22% of surveyed indicated good cooperation between the ITI IB and the MA of the ROP K-PV, 19% indicated current monitoring, while 13% indicated properly diagnosed problems in the ITI Strategy and the support obtained in situations of threats to project implementation. It is worth noting that all the employees surveyed indicated a number of areas which, in their opinion, require additional support, either due to insufficient resources in these areas or because they are not included in the territorial policy at all. The areas which should receive additional support, as indicated by a vast majority of the ITI BTFA Office employees, particularly include bicycle routes and public transportation (18%), water and sewage management (15%), thermal modernization and revitalization (9%), vocational education (6%). According to half of the respondents, the best project selection mode for ITI instrument implementation is non-competitive mode. The use of a non-competitive mode provides an opportunity for implementation of comprehensive and strategic projects to solve problems affecting the entire functional area.

This mode enables reservation of funds to support projects. According to the respondents, both competitive and non-competitive modes should be allowed in the 2021-2027 financial perspective. The use of competitive mode provides the best projects, selected through competition between the applicants, with a chance of implementation. Under this mode, beneficiaries can apply for support to meet their own internal needs. None of the ITI Office employees indicated that ITI BTFA projects should be implemented in the competitive mode only.

According to ITI BTFA Office employees, the ITI instrument promotes a partnership model of cooperation between various administrative units in urban functional areas, by increasing the efficiency of the actions taken, through implementation of integrated projects comprehensively addressing the needs and problems of cities and the functionally related areas. The ITI Office staff assessed the ITI partnership management system as effective and efficient, as it has brought tangible benefits, allowing achievement of the goals of building cooperation between Territorial Government Units. It is noteworthy that the efficiency of the actions taken, as well as trust among the ITI partners involved, have also improved, according to the respondents. The partners were able to exchange information and share experience. All the respondents confirmed that the ITI instrument should be maintained in the 2021-2027 perspective. As per the respondents, the ITI formula has proven effective in the current financial perspective, while the experience gained should be used to improve both ITI implementation and the utilization of this instrument in the future financial perspective. The building of a network of contacts and good rapport between the local government officials, as well as the exchange of experience, the development of a good and effective practices base, and the possibility of reciprocal consultation regarding problems proved to be of high importance. This instrument also allowed implementation of joint projects of supra-local significance, such as investments in bicycle routes.

4. Conclusion

The survey conducted among the ITI BTFA Office staff indicated a positive assessment of the ITI Intermediate Body's functioning. The management ITI partnership management system is effective, as it allowed improvement in the efficiency of the actions taken as well as increase in the trust among the ITI partners involved. The main factors which have affected the effectiveness of the projects implemented by the BTOF ZIT include good rapport with the beneficiary, cooperation between the ITI IB and the MA of the ROP K-PV, as well as ongoing monitoring. The area requiring additional support, under the territorial policy in the new financial perspective 2021-2027, should certainly involve a greater amount of dedicated EU funds for public transportation, bicycle routes and water and sewage management.

References

1. Barca, F. (2009). *An Agenda for a Reformed Cohesion Policy. A Place-based Approach to Meeting European Union Challenges and Expectations*. Brussels.
2. Camagni, R. (2008). Regional Competitiveness: Towards a Concept of Territorial Capital. In: R. Capello, R. Camagni, B. Chizzolini, U. Fratesi (eds.), *Modelling Regional Scenarios for the Enlarged Europe: European Competiveness and Global Strategies*. Berlin: Springer.
3. Chojnacka, K. (2014). Rozwój regionalny w aspekcie przestrzennym - analiza czynnikowa z uwzględnieniem teorii lokalizacji Paula Krugmana. *Studia i Materiały. Miscellanea Oeconomicae, Vol. 18, no. 4*.
4. Churski, P., Borowczak, A., Dolata, M., Dominiak, J., Hauke, J., Konecka-Szydłowska, B., Perdał, P. (2014). Rekomendacje dotyczące zasobów informacyjnych oraz wskaźnikowania zjawisk społeczno-ekonomicznych w badaniach regionalnych. In: J. Zaleski (ed.), *Rozwój statystyki regionalnej w kontekście potrzeb informacyjnych polityki spójności. Nowe podejście do przestrzeni. Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju, Iss. 255*. Warszawa: PAN.
5. Danielewicz, J. (2013). Współpraca gmin w obszarach metropolitalnych w ramach związków międzygminnych. *Prace Naukowe UE we Wrocławiu, No. 284*.
6. Davoudi, S., Evans, E., Governa, F., Santangelo, M. (2008). Territorial Governance in the Making. Approaches, Methodologies, Practices. *Boletín de la A.G.E.N, No. 46*.
7. *Delimitacja dla Miejskich Obszarów Funkcjonalnych Bydgoszczy i Torunia*. Opracowanie eksperckie prezentujące wyniki procesu weryfikacji terytorialnego kształtu Bydgosko-Toruńskiego Obszaru Funkcjonalnego. http://zit.btof.pl/attachments/article/6/btof_delimitacja.pdf, 8.12.2022.

8. Frankowski, J., Szmytkowska, M. (2015). Regionalne zróżnicowanie nowych partnerstw miejskich w Polsce. *Zarządzanie Publiczne, No. 2(30)*.
9. Grochowski, M. (2013). Dobre rządzenie – instytucje i kompetencje. In: A. Olechnicka, K. Wojnar (eds.), *Terytorialny wymiar rozwoju. Polska z perspektywy badań ESPON*. Warszawa: Scholar.
10. Gwizda, M., Kosewska-Kwaśny, M., Żółciński, Sz. (2014). *Fundusze Unii Europejskiej 2014-2020*. Warszawa: C.H. Beck.
11. Heffner, K., Gibas, P. (2015). Polityka spójności UE a obszary funkcjonalne centrów regionalnych w Polsce. In: E. Pancer-Cybulska, E. Szostak (eds.), *Unia Europejska w 10 lat po największym rozszerzeniu. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, Wrocław.
12. Kaczmarek, T. (2017). Implementacja Zintegrowanych Inwestycji Terytorialnych (ZIT) w miejskich obszarach funkcjonalnych. Przykład metropolii Poznań. *Rozwój Regionalny i Polityka Regionalna, 40*.
13. Kaczmarek, T. (2014). Ekspansja przestrzenna miast wyzwaniem dla zintegrowanego zarządzania. In: M. Madurowicz (ed.), *Kształtowanie współczesnej przestrzeni miejskiej*. Warszawa: UW.
14. *Krajowa Strategia Rozwoju Regionalnego 2010-2020: Regiony, Miasta, Obszary Wiejskie (National Strategy for Regional Development 2010-2020: Regions, Cities, Rural Areas)*. M.P. 2011, No. 36, item 423.
15. Kudełko, J., Musiał-Malago, M. (2021). *Obszary funkcjonalne ośrodków wojewódzkich w Polsce. Dynamika i zróżnicowanie rozwoju*. Kraków: Uniwersytet Ekonomiczny w Krakowie.
16. Nowak, J.F. (2012). Rozwój form i zakresu współpracy jednostek samorządu terytorialnego z partnerami zewnętrznymi. *Prace z Gospodarki Przestrzennej. Zeszyty Naukowe UE w Poznaniu, No. 247*.
17. Noworól, A. (2013). *Ku nowemu paradygmatowi planowania terytorialnego*. Warszawa: CeDeWu.
18. Agreement No. RR-VII-T.041.13.2015 of 29 June 2015, as amended, on delegation of tasks to the Intermediate Body under the Integrated Territorial Investments for the Regional Operational Program of the Kuyavian-Pomeranian Voivodeship for 2014-2020, concluded between: the Kuyavian-Pomeranian Voivodeship represented by the Board of the Kuyavian-Pomeranian Voivodeship, acting as the Managing Authority of the Regional Operational Program of the Kuyavian-Pomeranian Voivodeship for 2014-2020, and the City of Bydgoszcz – the Intermediate Body.
19. Agreement of 8 April 2014, as amended, on the implementation of the Integrated Territorial Investments for the Bydgoszcz-Toruń Functional Area.

20. Programowanie perspektywy finansowej 2014-2020. Umowa Partnerstwa (Financial perspective 2014-2020 programming. Partnership Agreement) (2014). Warsaw: Ministry of Infrastructure and Development, p. 213.
21. Regulation (EU) No. 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the ERDF, the ESF, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on these funds. *Official Journal of the EU L 347 of 20 December 2013*.
22. Regulation No. 1301/2013 of the European Parliament and of the Council of the EU of 17 December 2013 on the European Regional Development Fund and specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No. 1080/2006. *Official Journal of the EU L 347/289 of 20 December 2013*.
23. Regulation (EU) No. 1304/2013 of the Parliament and of the Council of 17 December 2013 on the European Social Fund and repealing Council Regulation (EC) No. 1801/2006. *Official Journal of the EU L 347/470 of 20 December 2013*.
24. Szafranek, E. (2017). Idea a praktyka wdrażania Zintegrowanych Inwestycji Terytorialnych w Polsce. In: T. Kudłacz, P. Brańka (eds.), *Teoria i praktyka rozwoju obszarów funkcjonalnych. Studia KPZK PAN, Vol. CLXXIV*. Warszawa.
25. Śleszyński, P. (2013). Delimitacja miejskich obszarów funkcjonalnych stolic województw. *Przegląd Geograficzny*, p. 85.
26. Resolution No. 198 of the Council of Ministers of 20 October 2015 on adoption of the National Urban Policy. M.P. 2015, item 1235.
27. Resolution No. 239 of the Council of Ministers of 13 December 2011 on adoption of the Concept of Spatial Management of the Country 2030. M.P. 2012, item 252.
28. Act of 11 July 2014 on the principles of implementation of cohesion policy programs financed under the financial perspective 2014-2020. *Journal of Laws 2014, item 1146*.
29. Zakrzewska-Półtorak, A. (2013). Zintegrowane Inwestycje Terytorialne jako nowe narzędzie wspierania współpracy jednostek samorządu terytorialnego – przypadek Wrocławskiego Obszaru Funkcjonalnego. *Biblioteka Regionalisty*, 13.
30. Annex No. 6 to the Regional Operational Program of the Lesser Poland Voivodeship 2014-2020. Integrated Territorial Approach - Areas of Strategic Intervention. <https://www.funduszeuropejskie.gov.pl/media/1589/RPOzal6.pdf>, 27.12.2022.
31. *Zasady realizacji Zintegrowanych Inwestycji Terytorialnych w Polsce (Principles of Implementing Integrated Territorial Investments in Poland). Planowanie perspektywy finansowej na lata 2014-2020 (Planning the Financial Perspective for 2014-2020)* (July 2013). Warsaw: Ministry of Regional Development. https://rpo.slaskie.pl/dokument/zasady_realizacji_it_w_polsce, 15.12.2022.

SOURCES OF COMPETITIVE ADVANTAGE FOR ENTERPRISES IN THE TFL INDUSTRY – CASE STUDY

Małgorzata MICHALCEWICZ-KANIOWSKA^{1*}, Małgorzata ZAJDEL²

¹ Politechnika Bydgoska im. J. i J. Śniadeckich; malgosia@pbs.edu.pl, ORCID: 0000-0003-2154-5838

² Politechnika Bydgoska im. J. i J. Śniadeckich; m.zajdel@pbs.edu.pl, ORCID: 0000-0003-4535-2897

* Correspondence author

Purpose: The aim of the research was to assess and analyse the factors that are the sources of competitive advantage of the company in the TFL industry, which stands for Transport, Forwarding, Logistics.

Design/methodology/approach: The article analyses the company's own documents. Opinions in the analysed company were collected using a survey questionnaire. A number of analyses were carried out to create data compositions and decompositions. The subject of the analysis was a local logistics centre providing its distribution, storage and transport services both in the region and the whole country. It specializes in providing integrated logistics solutions and designing the best possible methods of distribution, storage and transport of the region's customers.

Findings: According to the study, the analysed centre ensures professional and efficient implementation of logistics processes. It provides services in the field of comprehensive handling of the order execution process, starting from the administration of products to the preparation of transport and subsequent distribution. The conducted research, however, indicated several weak points of the company, which are: high costs related to the exchange of information or untimely execution of orders. According to the authors of the study, in order to gain an advantage on the market, the analysed logistics centre should implement solutions that will eliminate the above-mentioned risk factors and improve them enough to become a source of competitiveness for the company.

Originality/value: The article presents the results of the composition of source and survey data concerning a company in the region of the TFL industry. The study attempts to indicate the determinants of the competitive advantage of a logistics company. Due to the analyses used, it is a very interesting overview of factors from the point of view of the functioning of a local logistics company.

Keywords: TFL, transport, forwarding, logistics, logistic centre, transport in the supply chain.

Category of the paper: Case study.

Introduction

Contemporary supply chain management is defined as a decision-making process related to the synchronization of physical, information, and financial demand and supply streams flowing between its participants in order to achieve a competitive advantage and create added value. It must be positive, i.e. beneficial, for all its links, customers and further stakeholders (Witkowski, 2010). Supply chain management concerns:

- joint planning, forecasting, replenishment of stocks and control and steering of related processes in the supply chain,
- composing the product and the network. It is making important decisions about products and services, the entity structure and the links between the links of the chain,
- creating products using information obtained from suppliers,
- creating a production network, which leads to the selection and definition of production tasks, production locations and maintaining stocks,
- optimizing the efficiency of supply chain processes that are related to the flow of products, information and money,
- ordering and integrating the product, load or partner location on a global scale,
- permanent analysis and control of business performance indicators and measures (Kawa, 2011).

Improving supply chains requires the development of three main dimensions of electronic economy, which are communication: internal - between employees of the company using the Internet and computer systems supporting teamwork, and external - with selected economic organizations thanks to the extranet network and the company with an unlimited number of existing and potential customers or partners using the generally available internet network (Witkowski, 2016).

To obtain the best results of supply chain management optimization, numerous methods are used (Szymonik, 2011), including: LM (Lean Management), AM (Agile Management), also called flexible, QR (Quick Response), almost immediate, ECR (Efficient Consumer Response) - efficient service in the customer's supply chains, TQM (Total Quality Management) - comprehensive quality management, Six Sigma - called "sigma", BPR (Business Based Reengineering) - business process redesign, JiT (Just in Time) - at the right moment, SCOR (Supply Chain Operation Reference-Model) - chain reference model, VMI (Vendor Managed Inventory) - inventory management by the supplier, CS (Consignment Stock) - inventory consignment, or CPFR (Collaborated Planning, Forecasting & Replenishment) - shared planning, forecasting and replenishment of stocks (Szymonik, 2013).

It is important here that today's modern supply chain management is mainly focused on meeting the needs and requirements of the customer. Here we see a situation of pro-client attention. These requirements are still higher, so the commitment must be greater. Leading to

the greatest customer satisfaction should not start and end with knowing their needs, but should focus on service and quality. What is important is a broad and proven knowledge of the processes and conditions existing during the purchasing process and the entire sales funnel. Important in modern supply chain management is the decision-making process of various demand and supply streams. This stream flows between its participants in order to quickly and effectively achieve competitive advantages, and the creation of added value was a benefit for all its links. Customers and other stakeholders should also be considered (Witkowski, 2016).

Supply chain management is based on information that must be true, reliable and comprehensive, and provided in a timely manner. Fast, efficient flow is an elementary condition for the success of the quick response strategy. This means flexible, efficient and quick response. Synchronization of the activities of all cooperating chain links is the basis of intelligent supply chains - iSupplyChain (iSC) (Person, James, 2002). A company that carries out logistics deliveries must obtain solutions to the complex and difficult tasks that they face. Another challenge is the increasing emphasis on the flexibility of activities, which is not so easy with a pre-planned development strategy. In such a situation, the company can use the concept of an agile supply chain consisting in the use of modern IT solutions and the implementation of creative projects.

The analysis of the literature shows that the determinant of supply chain agility may be: very high specialization, mutual trust of partners, good and development-friendly organizational culture, appropriate cost management or resource exchange efficiency (Waściński, 2014).

The role of transport in the logistics system and in the supply chain

In supply chain management, transport plays a fundamental role, it is a tool without which goods and services could not be moved between the sides of the chain. The implementation of transport services is directly related to the choice of means and modes of transport. Depending on the type and size of the load, as well as packaging and transport technology, transport services can be classified in different ways, e.g. full truckload, part load and groupage, or passenger and freight.

Transport services provided in the transport system by transport companies, logistics operators, carriers, etc. are a special type of service carried out on the market called the transport services market. The demand for transport services results, among others, from the manufacturing and production processes of various enterprises and from the need to supply these enterprises with appropriate resources. These services are also a consequence of diversification of the structure of space and production range, as well as the structure of the direction of transport, and changes in the supply of sales markets and product distribution.

All these processes and activities are related to the proper transport service for people receiving a given area of the transport network. Transport service is conditioned by the structure of transport tasks, which are mainly determined by: type and quantity of cargo, relation or relations of cargo movement, i.e. by a pair or pairs of the type "shipping point - cargo collection point" and the date or dates of delivery or deliveries (Witkowski, 2016).

Transport services provided in supply chains, as well as logistics services for enterprises, are usually based on standard technological solutions typical of the entire market. Companies operating in supply chains compete with each other primarily in terms of price and quality of service, which includes, among others, service delivery time and added elements, such as monitoring or simultaneous handling of information streams and financial settlements (Ambroziak, Gołębiowski et al., 2015).

The transport system is a purposeful system whose task is to move people and material goods in space. The processes implemented in the transport system either constitute essential elements of supply chains or are independent of them (when they are carried out for entities not participating in supply chains). In both cases they reflect physical links in the logistics network. As a result of the movement, the loads are given specific spatial-temporal characteristics (at a certain time, the location of material goods changes).

Therefore, one of the aspects of the functioning of supply chains are the processes of intentional human activity that changes the time-spatial characteristics of loads in the spheres of supply and in the spheres of distribution of a specific group of enterprises. For this reason, the purpose of supply chain research, described in the literature on the subject, is to properly define the processes taking place in them. The transport process can also be defined as successive and interconnected activities necessary to meet the transport need. This process includes the transport process and activities conditioning its implementation such as: preparation of cargo for transport, intermediate storage, delivery of cargo and all organizational activities. The transport process is therefore a narrower concept than the concept of a transport process. A transport process, e.g. in a given supply chain, may include one or several transport processes, depending on the number of modes of transport involved in its implementation. (Bentkowska-Senator, Kordel et al., 2011).

In terms of the definition of the supply chain and its role in the effective movement of cargo, it should be noted that elements such as infrastructure, means of transport, human resources, information flow, work organization rules and transport technologies determine the appropriate implementation of the processes of moving cargo from the points of origin to the points of receipt. According to the above, one of the elements conditioning the performance of transport tasks in the supply chain are means of transport. In the aspect of transport technology, means of transport are all vehicles and devices used to move goods or (and) people - both over long and short distances. These means fulfil the basic transport function of moving, although the distance range of their operation varies. In this aspect, the following are distinguished: means of transport, i.e. cars and lorries, and means of reloading, i.e. machines and loading devices.

The basis of this division is the scope of operation. In general, the operating range of means of transport is defined in kilometres, and of reloading means - in metres. The features and properties of means of transport depend on various factors, the most important of which are the type of transport mode and the type of transport performed. However, the primary factors are always the conditions resulting from the object of movement (i.e. people and things), i.e. the requirements of passengers and the characteristics and properties of things (Całczyński, Sochańska, 2018).

It should be noted that the movement of material goods in the supply chain is conditioned by the potential of the transport system, including: transport network infrastructure, means of transport that are located in transport bases in a given area, transshipment points (logistics centres, distribution centres, warehouse facilities, transshipment terminals etc.) that are located in a given area and the organization of the transport system elements, describing their cooperation in the implementation of transport tasks.

The organization of the operation of the transport system should ensure minimization of the costs of transport tasks, and at the same time take into account the capabilities of transport service providers and the need to meet customer requirements. If transport tasks in the supply chain are performed by more than one transport company, then one of them can take over the function of the organizer of the whole operation - the function of a forwarder for a specific group of cargo (or companies). This function can also be performed by a separate company, which is then called a forwarding company or a logistics operator. (Simonik, 2013).

Mapping the organization of transport in supply chains and other areas of logistics networks captures the relationships between the elements of the supply chain (which are the points of sending and receiving loads) and the volume of transport tasks resulting from the needs of supply or distribution. Therefore, the organization of transport in supply chains is a way of implementing transport services for elements of these chains, with specific infrastructural equipment of supply chains and the transport potential of transport companies and logistics operators. This means that the implementation of transport tasks is possible with established technical, economic, organizational and human resources. (Bogdanowicz, 2012).

To sum up: the transport service of supply chains may have a different organization resulting from the specificity of the transported loads. In practice, there are many single, interpenetrating supply chains in the supply network, in which - from the point of view of achieving the goal - management takes place within the entire supply network. Supply chains overlap and create a complicated network of related entities, which are recipients, co-operators, suppliers and competitors to each other.

Empirical research methodology

The activity of the analysed company includes the provision of transport, forwarding and logistics services (TFL industry) and acting as a logistics centre. It specializes in providing comprehensive integrated logistics solutions, as well as in designing the most optimal ways and means of distribution, storage and transport of a diverse range of customers in the region. The logistics centre thus ensures professional and efficient implementation of the above-mentioned processes. The company's logistics is supported by a technologically advanced transport and shipment management system, and the company uses a modern, diverse fleet of vehicles. However, due to the applicable regulations (General Data Protection Regulation), the company did not consent to the public use of its name.

The company's customers are mainly retail chains and international producers of food products. The company stands out in the TFL industry in that it is one of the largest employers and thus employs about 2500 people in Poland. It has over 9600 square meters of warehouse space. It has vehicles that run on national and international roads. The warehouse infrastructure is developed at a high level, as evidenced by, for example, a controlled temperature zone, modern internal transport, a high-storage system, 24-hour security, systems protecting products against rodents and insects. In warehouses, goods are unloaded and accepted with simultaneous quantitative and qualitative control.

The strategic vision adopted by the company provides for development in the area of transport and forwarding, warehousing and additional services in market segments that are characterized by higher advancement and complexity of logistics services, higher quality requirements, as well as higher profitability or entry barriers. The company's goal is to achieve the position of an integrated logistics operator, which will be one of the strongest entities in the logistics industry in Poland.

The aim of the research presented in the article was to assess and analyse the factors constituting the sources of competitive advantage of the TFL industry company.

A research method is a way of solving a given research problem with the use of an appropriate research technique, using appropriate techniques and tools. In scientific research we do not use random methods, but deliberately selected and planned methods. In a scientific study, we therefore consciously choose them due to the subject and purpose of the research, as well as the available resources.

The article uses a research technique: the so-called analysis of the content of the collected materials and a survey, and the tools used were an observation tool and a survey questionnaire. The source analysis of the materials provided by the company was also used and the obtained data was synthesized.

Selected research findings

The analysis of the company's source documents proved that when looking for factors of competitive advantage, the company undertakes various activities, including expansion of warehouse space, stable growth, development of services for new market sectors and new contracts. It also plans to implement further innovations, as well as enter new markets, which include DIY (Do It Yourself), fresh and e-commerce, as well as provide its customers with friendly service and reliable solutions. The vision of the logistics centre is comprised in the following sentence: "We deliver the future". The company aims at gaining a competitive advantage and achieving a leading position on the market. It indicates the following factors as determinants of success:

- customer orientation and satisfaction,
- reliability and honesty,
- professionalism,
- entrepreneurship,
- development and improvement,
- credibility,
- acting with passion.

Research shows that in order for the company to achieve the position of an integrated logistics operator, which will be one of the strongest entities in the industry in the region, it is necessary to pay attention to safety and reliability. As well as acting responsibly and efficiently, providing customers with safe and secure deliveries is paramount. The logistics centre additionally looks for innovative solutions and introduces innovative possibilities in order to meet the needs of contractors. Special teams of employees, in connection with the set goal, deal with the service of individual contractors, thus ensuring the correct implementation of each order, administering the products in detail and preparing transport for further distribution. As part of the cooperation, they deal not only with domestic but also international distribution, including customs clearance and premiums. Such logistic service is supported by a professional system for managing transport and shipments. Such an attitude of employees will make it easier to achieve the goal of gaining a competitive advantage and becoming a leader in the TFL industry in the future.

In its activities, the researched company points to the key determinants of success:

- human capital - employees who are the most valuable resource, because their commitment and teamwork are of key importance to the company,
- quality, because the company strives to constantly improve the level of services to guarantee complete customer satisfaction,
- profit, because it guarantees the functioning and future development and stable position of the company.

The conducted research shows that the essence of the centre's logistics is such management that customers are fully satisfied with the cooperation. The main areas in the analysed company concern procurement, distribution, transport and marketing, or effective information management. The scope of services includes deliveries to: shops, wholesalers, retail chains, individual customers, service stations and central warehouses. The company's goal is therefore to provide its customers with optimal solutions in the field of distribution, taking into account the organization of the warehousing process. The customers of the analysed centre are primarily producers of various articles, who focus solely on the production process of high-quality assortment, while the distribution and storage process is left to specialists in this area.

Another aspect of the analysis concerned tasks in the area of strategic goals implementation in the enterprise, which was observed to be related to the planning process. The enterprise uses two types of planning:

- general - developed on the basis of strategic plans,
- operational - related to practical and detailed actions in order to achieve the assumed goals.

One of the basic methods used in the enterprise is forward planning. The date of commencement of all operations of a given order is agreed with the recipient. Thanks to the precise calculation of the time needed to perform individual activities, a schedule of operational activities can be constructed. The deadline for the provision of the service is subject to acceptance by the customer.

In everyday practice, it also happens that the company uses the so-called back-planning. It consists mainly in calculating the time allocated for subsequent activities, with the difference that the final date of service completion is taken into account and on its basis the time of starting work on the process is calculated. As a result, a plan is developed to secure the implementation of the assumed project/order. In preparing the plan, the company takes into account all the variables related to the market environment - competition, workforce, sources and methods of supply, etc.

The company also analysed the used supply chain method – Quick Response (QR). This method assumes quick replenishment by the supplier of the customer's inventory, through simple access of the supplier to the data directly from the customer's point of sale. This method is often used in the clothing industry, too. This system was developed in the late 1980s and early 1990s. The factors that influenced the creation of the QR system were the combination of the two most important functions of the company at that time: marketing and logistics, and the inspiration with the Japanese concept of Just-In-Time. The method brought positive experiences and significant effects for enterprises - mainly in production. In the 1990s, attempts were made to transfer the previously gained experience to the physical distribution sector. As a result, the delivery cycle became more and more important in the competition. It took place directly between enterprises in the production sphere, as well as in other areas of the enterprise's operation. Changes in customer behaviour were also noted. This was especially

true of markets that were heavily influenced by random events and fashion. This applies, among others, to the clothing and food industries.

The QR concept assumes:

- shorter and denser time-planning;
- all-time availability of stock information;
- unified, integrated logistics networks that depend on fast-arrival transportation, strategic cross-docking, and well-functioning goods receiving and distribution systems;
- partnerships between producers and retailers, including cooperation and information exchange;
- redesign of manufacturing operations and processes to reduce batch sizes and changeover times, increase sensitivity and flexibility, and to align major production schedules with forecasts and current customer orders;
- commitment to total quality management.

The advantage of such a system is the transfer of information directly from the place of actual demand directly to the logistics system of the supplier. While responsiveness is associated with high fixed costs, the incremental costs of improving service remain relatively low. As a result of the transfer of information, appropriate logistical decisions are made immediately, order preparation within the system is accelerated, which significantly shortens the total time of order completion. The consequence of this is lower inventory levels (Loska, 1998).

The last element of the study was the analysis of transport operations related to the movement of people or things included in the transport process.

In the common definition, the transport process forms an integral part of the passage of goods in the logistics chain. It directly affects the timeliness of delivery. Because of this, it is also important for the quality of a given product. In addition, it does not directly, but indirectly, affect the satisfaction of potential customers. It also translates into a position against the competition.

Transport operations include:

- organizational activities related to the planning of transport routes and the preparation of transport documents;
- executive activities - transport, i.e. everything related to the transport process. These are such elements of the process as loading of goods, transport, unloading. These are activities directly involving the means of transport;
- commercial activities relating to financial matters, which means that they are directly related to the transport charges of goods and people.

The next stage of the study included a survey among employees and customers of the logistics centre.

Twenty-five people took part in the employee opinion survey. They were people aged 18 to 46 and older. The largest group of respondents are men whose seniority ranges from one to five years. Mostly they were physical workers. The respondents rated the functioning of the supply chain at 7 and 8 on a scale of 1 to 10. The most important issues in the supply chain that require improvement are the high costs of information exchange. On the other hand, the most important customer service factors are problems with timeliness, but the frequency of their occurrence, according to the respondents, is low. According to the respondents, the company should improve its marketing and expand the scope of its operation. It was also indicated that only selected elements of supply chain management methods are used in the logistics centre, which may affect the deterioration of the quality of the company's operation.

Similarly, 25 people participated in the customer opinion survey, with the largest number of men aged over 46 in this survey. Most of the respondents do not use the services offered by competing enterprises. The performance of transport services in the supply chain was rated 9 on a scale of 10. The problem that has been noted and related to transport services in the supply chain within the company, is mainly the uncertainty of the delivery date, and the basic advantage is the affordable prices of services.

Diagnosed problems can be easily eliminated by implementing appropriate logistics solutions so that the company can continue to develop and become a leader on the TFL market.

Summary and main conclusions

According to the study, the analysed centre ensures professional and efficient implementation of logistics processes. It provides services in the field of comprehensive handling of the order execution process, starting from the administration of products to the preparation of transport and subsequent distribution.

Transport is one of the most important and technically, economically and organizationally complex sectors of the national economy. It can be said that the national economy, which is developing under the influence of transport, poses more and more tasks to it. Without the development of transport, there could be no further increase in production and the dynamics of the social division of labour. These facts show the reciprocal nature of the relationship between transport and its environment. On the other hand, the transport service of supply chains may have a different organization resulting from the specificity of the transported loads. However, in practice, there are many single, interpenetrating supply chains in the supply network, in which - from the point of view of achieving the goal - management takes place within the entire supply network. The qualitative assessment of transport includes components, components or factors affecting the handling of deliveries. Quantitative indicators of the assessment include, among others, the number of shipments, tonne-kilometres already made or

real working time and delivered freight weight. These indicators are a set of analytical tools for measuring and evaluating logistics processes and systems. Their most important task is to reliably reflect the state that is taking place.

The conducted research, however, indicated several weak points of the company, which are: high costs related to the exchange of information or untimely execution of orders. In order to gain an advantage on the market, the analysed logistics centre, according to the authors, should implement solutions that will eliminate the above-mentioned risk factors and improve them enough to become a source of competitiveness for the company.

References

1. Ambroziak, T., Gołębiowski, P., Jachimowski, R., Szczepański, E. (2015). Charakterystyka łańcucha dostaw na płaszczyźnie dystrybucyjno-handlowej. *Logistyka*.
2. Bentkowska-Senator, K., Kordel, Z., Waśkiewicz, J. (2011). *Koszty w transporcie samochodowym*. Warszawa: Instytut Transportu Samochodowego.
3. Bogdanowicz, S. (2012). Podatność. *Teoria i zastosowanie w transporcie*. Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej.
4. Boyson, S., Wiley, J. (1999). *Logistics and Extended Enterprise*, New York.
5. Bozarth, C., Handfield, R.B. (2007). *Wprowadzenie do zarządzania łańcuchami dostaw*. Gliwice: Helion.
6. Bujak, A. (2011). Innowacyjność i innowacyjne rozwiązania w logistyce. *Logistyka*. Poznań: Instytut Logistyki i Magazynowania.
7. Burnewicz, J. (2010). Perspektywa innowacyjna transportu i logistyki. In: E. Załoga, B. Liberadzki (eds.), *Innowacje w transporcie. Korzyści dla użytkownika. Zeszyty Naukowe, s. Ekonomiczne Problemy Usług, nr 59*. Szczecin: Uniwersytet Szczeciński.
8. Całczyński, A., Sochańska, J., Szczepankiewicz, W. (2018). *Metody racjonalizacji przewozów w obrocie towarowym*. Kraków: Akademia Ekonomiczna w Krakowie.
9. Ciesielski, M. (2004). *Logistyka w strategiach firm*. Warszawa: PWN.
10. Dyczkowska, J. (2018). *Nowoczesne koncepcje modeli biznesu operatorów logistycznych*. Społeczna Akademia Nauk, Przedsiębiorczość i Zarządzanie.
11. Dziekoński, K., Chwiećko J. (2013). *Innowacyjność przedsiębiorstw z branży TSL, Ekonomia i Zarządzanie*. Oficyna Wydawnicza Politechniki Białostockiej.
12. Gattorna, J. (2013). *Dynamiczne łańcuchy dostaw. Wartość tworzą ludzie*. Poznań: Euro Logistics.
13. Gołębska, E. (2001). Logistyka a konkurencja globalna. In: M. Ciesielski (ed.), *Logistyka w tworzeniu przewagi konkurencyjnej firmy*. Poznań: Wydawnictwo Akademii Ekonomicznej.

14. Janczewska, D. (2015). *Plan marketingowy jako instrument kształtowania konkurencyjności przedsiębiorstwa w branży TSL. Czasopismo naukowe o problemach współczesnego zarządzania*. Łódź: Akademia Humanistyczno-Ekonomiczna.
15. Kauppinen, T.J., Lindqvist, J., Beuthe, M., Ewer, G., Haasis, H-D., Kallstrom, I., Lloyd, M., Ojala, L., Tavasszy, L., Bontekoning, Y., Chevroulet, T., Goentzel, J., Krzyżaniak, S., Scjott-Larsen, T., Sorghetti, M. (2006). *Elements for European Logistics Policy – A Discussion Paper*. Helsinki: the Ministry of Transport and Communications of Finland.
16. Kawa, A. (2011). *Konfigurowanie łańcucha dostaw*. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego.
17. Koszeluk, J. (2013). *Usługi logistyczne*. In: G. Biesok (ed.), *Logistyka usług*. Warszawa: CeDeWu.pl.
18. Koźlak, A. (2014). Wsparcie innowacyjności przedsiębiorstw sektora TSL w Polsce z funduszy Unii Europejskiej. *Logistyka*.
19. Loska, C.M. (1998). *Logistyka i zarządzanie łańcuchem podaży. Jak obniżyć koszty i poprawić jakość obsługi*. Kraków: Wydawnictwo Profesjonalnej Szkoły Biznesu.
20. Matwiejczuk, R. (2006). *Zarządzanie marketingowo-logistyczne. Wartość i efektywność*. Warszawa: C.H. Beck.
21. Ojala, L., Andersson, D., Naula, T. (2008). *Logistics Value Chain, Memedovic Global Production Networks*. UNIDO.
22. Person, M., James, P. (2002). *The Intelligent Supply Chain*. Logistics Europe.
23. Przybylska, E., Żebrucki, Z., Kruczek, M. (2016). Typologia innowacji w branży TSL. *Zeszyty Naukowe. Organizacja i Zarządzanie*. Politechnika Śląska: Wydawnictwo Politechniki Śląskiej.
24. Saniuk, A., Saniuk, S. (2016). *Pomiar efektywności w przedsiębiorstwach TSL – wyzwania i trendy*. Społeczna Akademia Nauk, Przedsiębiorczość i Zarządzanie.
25. Skowrońska, A. (2009). *Logistic Centres as Examples of Logistic Projects in the Context of Sustainable Development*. In: J. Witkowski, A. Skowrońska (eds.), *Zarządzanie projektami logistycznymi. Prace Naukowe Uniwersytetu Ekonomicznego nr 11*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego.
26. Szymonik, A. (2011). *Logistyka i zarządzanie łańcuchem dostaw*. Warszawa: Difin.
27. Szymonik, A. (2013). *Ekonomika transportu dla potrzeb logistyka(i)*. Warszawa: Difin.
28. Waściński, T. (2014). Procesy logistyczne w zarządzaniu łańcuchem dostaw. *Zeszyty Naukowe Uniwersytetu Przyrodniczo-Humanistycznego w Siedlcach*.
29. Witkowski, J. (2010). *Zarządzanie łańcuchem dostaw. Koncepcje, procedury, doświadczenia*. Warszawa: PWE.
30. Witkowski, J. (2016). *Zarządzanie łańcuchem dostaw: koncepcje, procedury, doświadczenia*. Warszawa: PWE.

31. Witkowski, J., Bąkowska-Morawska, U. (2011). Strategie i logistyka w sektorze usług. Strategie na rynku TSL. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*. Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.
32. Zowada, K. (2019). Rynek TSL jako płaszczyzna rozwoju zielonych praktyk logistycznych. *Marketing i Rynek, XXVI*.

INTERNAL COMMUNICATION IN ENTERPRISES LOCATED IN POLAND WITH THE USE OF MEANS OF ELECTRONIC COMMUNICATION – RESEARCH FINDINGS

Marta MISZCZAK

Military University of Technology in Warsaw; marta.miszczak@wat.edu.pl, ORCID: 0000-0001-7194-3493

Purpose: The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means.

Design/methodology/approach: The article is based on a review of the literature in the field of organizational communication and own research. The research was conducted by means of a diagnostic survey among 225 companies located in Poland (16 provinces) using the CAWI technique and an author's survey questionnaire.

Findings: The survey results illustrate the high and continuing popularity of e-mail communication and the untapped potential of tools designed for team and project work. No correlation was noted between the use of means of electronic communication with the scope of the company, the form of ownership of the company, the ownership capital and the respondent (manager, IT manager, owner, board member). The correlation related to the use of e-communication means and the size of the company appears only in the case of e-mail and electronic workflow systems. A similar relationship, but involving more electronic communication means, appears for the degree of computerization of the company.

Research limitations/implications: A certain difficulty, already at the design stage of the survey, was the preparation of a list of means of electronic communication. There is not one in the literature that is exhaustive, disjointed and accepted by all. This fact points to the need for research and findings in this area. The risks accompanying the study are related to the development of technology and the obsolescence of specific communication tools.

Originality/value: The paper is primarily of cognitive value. The findings allow those responsible for communication in an organization to confront the means of electronic communication used in their organization with those used by others. It also illustrates the untapped potential of electronic tools for team or project work. The results of the study can serve as a reference point for further comparative research. The paper draws attention to the area of intra-organizational communication, which is still unstable and under development in the Polish reality.

Keywords: internal communication, means of electronic communication.

Category of the paper: research paper.

1. Introduction

Modern technologies have long influenced the way people communicate. They determine the formation of interpersonal relations, force the acquisition of knowledge and skills necessary for efficient communication through them. The change in communication with the use of the Internet, particularly accelerated after the outbreak of the pandemic caused by the SARS-COV-19 virus. The situation left no choice for employers and employees whose way of doing their jobs allowed them to work remotely. It became necessary to provide equipment, acquire new technologies and acquire new competencies, but also to properly organize the process of communicating with employees.

The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means. Secondary sources and a diagnostic survey method were used to achieve the goal. The survey was conducted using the CAWI technique among 225 companies located in Poland. It should be noted that there are not numerous studies devoted to these issues. The subject of internal communication in the Polish reality is still unstable and in the development stage, and often treated as one of the elements of marketing communication. The relevance of the issues is related to a number of benefits of integrating electronic communications into organizational communications, including deepening relationships with stakeholders, integrating dispersed organizations or facilitating access to work for people in regions with high unemployment rates.

2. Selected problems related to the study of internal communication in an organization and the advantages and disadvantages of communicating through electronic means of communication – literature review

The role of internal communication in organizations is appreciated both in the academic literature (e.g. Stankiewicz, 2006; Cornelissen, 2010; Hamilton, 2013; Ober, 2013; Jaworowicz, Jaworowicz, 2017) and by practitioners (e.g. Widarowska, 2019). It is also the subject of research (e.g. Kończak, 2020; Biernacka, 2022). Unfortunately, it is accompanied by some problems. Many authors stress that internal communication is considered in conjunction with marketing, public relations, Human Resource or employer branding (e.g. Zajkowska, 2009; Kończak, 2020). This results in a blurring of the boundaries between the different types of communication and a different approach to the recipient of internal communications (employees), who are treated as internal stakeholders or, according to the philosophy of internal

marketing, as internal customers (Varey, 1995; de Farias, 2010). The way we communicate with this audience is incredibly important, because it translates into work efficiency and atmosphere in the organization, as well as loyalty to the place of employment. Employees can be a company's best ambassadors in its environment. Their activities and messages can help the organization build a good corporate image, or the opposite. This link between internal and external communication is recognized by Joep Cornelissen (2010, p. 26), among others, locating them in corporate communication. In both types of communication (internal and external), the same communication tools are used to a large extent, although with different intensity. This fact can be read positively, but it is also a reason for the difficulty of sorting out and classifying communication tools, especially when it comes to communication via modern ICT technologies. In addition, as J. Cornelissen (2010, p. 227) notes, modern technologies in communication mean that communication directed to employees does not always stay within the organization, and the line between internal and external communication blurs.

J. Trębecki (2012, p. 42) stresses that a classification of internal communication tools, would allow for a better understanding of them, a more informed selection of tools in terms of the organization's communication needs, and easier research. However, few descriptions and systematics of internal communication tools are present in the literature (Tarczydło, 2009; Wojcik, 2011; Trębecki, 2012, p. 42). Those that do appear deal with teams and their computer-assisted work (direct, synchronous and asynchronous communication) (Potocki, 2003, pp. 200-201; Grzenia, 2005, p. 65; Stefaniuk, 2014, p. 57). In addition, they are fraught with the difficulties of preparing a disjointed breakdown (Steinfeld et al., 2002, p. 10), as "various communication tools are combined within one comprehensive software package" (Stefaniuk, 2014, p. 57).

In view of these difficulties, in Poland there is still a high degree of emphasis on instruments that are designed to serve intra-organizational communication, although the international study *State of the Sector in trends for 2022* (Biernacka, 2022) points to a comprehensive approach to internal communication. Some scholars also draw attention to this, stressing that the intensive development of modern means of communication makes them quickly obsolete (Grzenia, 2006; Flanagin, 2020). Therefore, it makes sense to focus on the phenomena and processes behind these tools (Flanagin, 2020).

An additional difficulty is the terminology used to describe communication through modern technologies. In the literature, one can encounter the term media communication (Dobek-Ostrowska, 1999, p. 22), computer-mediated communication (CMC), virtual communication, or electronic communication (Grzenia, 2005, pp. 13-14, 59; Stefaniuk, 2014, pp. 51-53) communication using ICT (Pawlak-Kołodziejska, 2018, p. 198). Of these terms, according to T. Stefaniuk, electronic communication is the most unambiguous, and its definitions focus on a specific technology for the transmission of information (Stefaniuk, 2014, pp. 52-53). This perspective on the perception of electronic communication coincides with the views of J. Grzenia (2006, p. 59). Electronic communication, is any media in which "information from

the sender is - with the help of an appropriate device - transformed into electrical or electromagnetic signals, and then transmitted in this form to the receiver, who also uses an appropriate device - used to decipher the recording and give it a human-understandable form" (Grzenia, 2005, p. 59).

Electronic means of communication make it possible to work in virtual teams, work remotely or telecommute. This way of organizing work has advantages and disadvantages. They are described in abundance in the literature (e.g. Maruping, Agarwal, 2004, pp. 975-990; Stefaniuk, 2014, pp. 28-36; Shwartz-Asher, Ahituv, 2019, p. 551; Kobis, 2019, p. 58). During the crisis caused by the Covid - 19 virus, in some professions, remote work was a boon and a solution to a difficult time, providing a sense of health and economic security, continuity of work and the opportunity to interact (contact) with others. With this form of work, both employer and employee, save money and time. Remote work allows for flexibility and talent acquisition, regardless of geographic location (Stefaniuk, 2014, p. 36), it also provides employment opportunities in regions with high unemployment rates. Studies show that compared to face to face teams, virtual teams are more creative (Maruping, Agarwal, 2004, p. 975; Stefaniuk, 2014, p. 31), this is, among other things, a result of their high cultural diversity. However, it should be noted that virtual contacts can embolden and arouse the activity of some people, while blocking others. The effectiveness of work with electronic means of communication requires their appropriate selection (Maruping, Agarwal, 2004, pp. 975-990), for example, e-mail (asynchronous communication) will not work well in tasks that require immediate response and ensure its dynamics. Although, on the other hand, asynchronous communication allows emotions to be muted. Videoconferencing, although it largely mirrors face-to-face meetings, is not conducive to developing interpersonal contacts and solving difficult problems. Some electronic communication tools can block the flow of information and the wrong ones can do more harm than good.

It is also important to recognize the disadvantages of communication through electronic means of communication, such as weakening the loyalty of the employee to the organization or team; the lack of face-to-face contacts, especially in informal communication, wreaks havoc; limited non-verbal communication, does not facilitate understanding of the context of the conversation and affects trust (Shwartz-Asher, Ahituv, 2019, p. 551). In addition, research shows that video communication is not as efficient as face to face communication, although more efficient than audio communication. Adding text to video and audio communication improves productivity and satisfaction (Shwartz-Asher, Ahituv, 2019, p. 551). The imprudent use of electronic communication can compromise information security, which is not insignificant for the company (Kobis, 2019). There is also a risk of employees becoming addicted to ICT (Cudo, Zabielska-Mendyk, 2019, pp. 61-79) and workaholism, among other things, due to the possibility of doing work at any place and at any time. Different time zones force night or offline work. Working on the basis of modern technology, there is also the risk of having to interrupt it in the event of a computer network failure and the risk of data loss

(Kobis, 2019, p. 58). In addition, connection and cooperation is only possible if all involved use the same electronic communication tools and software.

These are just a selection of the advantages and disadvantages of using electronic communications in communication and cooperation between employees.

3. The means of electronic communication in internal communication of enterprises located in Poland - own research conducted after the outbreak of the pandemic Covid-19

3.1. Survey methodology and characteristics of the survey sample

Internal communication using electronic means of communication was one of the areas of research undertaken as part of a research grant carried out at the Military University of Technology (UGB No. 744/2021). The study was carried out by a diagnostic survey method using the Computer Assisted Web Interview (CAWI) technique and a survey questionnaire prepared for the study. Conducting the survey, was commissioned to the IPC Research Institute Ltd. Implementation of the survey took place in July-September 2020. 225 companies participated in the survey. The selection of companies for the survey was stratified randomly and included companies from 16 provinces in Poland.

The respondents were business owners (16%), board members (19.6%), general managers (46.2%), managers in charge of IT in the surveyed organizations (18.2%). They represented small enterprises with 10 to 49 employees (33%), medium-sized enterprises with 50 to 249 employees (33%) and large enterprises with more than 250 employees (33%). An equal number of people participated in the survey, being representatives of trade (33.3%), manufacturing (33.3%) and services (33.3%). The form of company ownership was also taken into account. A corporation was represented by the largest number of people (55.1%), followed by a partnership (35.1%) and then a sole proprietorship (9.8%). Companies with predominantly or exclusively Polish capital (76.9%) and predominantly or exclusively foreign capital (23.1%) participated in the survey. The degree of computerization of the company was also asked. No or low level of computerization of the company was declared by 3.6% of respondents. A medium level of computerization of their company was indicated by 44% of respondents, a high level by 42.7% of respondents and a very high or total level by only 9.8%.

Calculations were conducted using PS IMAGO PRO 6.0 program.

The purpose of the paper is to describe the means of electronic communication used by companies for internal communication, to rank them according to the frequency of use by organizations, and to identify the attributes of the organization affecting the frequency of use of these means. The following research questions were formulated: 1. What means of electronic

communication within the enterprise, are used most often, and 2. Does the enterprise's use of means of electronic communications depend on the enterprise attributes adopted in the study?

Based on the analysis of the literature and results from research reports available on the Internet, the following research hypotheses were adopted: H1. The most common means in internal communication via of means of electronic communication include the traditionally used e-mail, instant messaging for voice and video calls and teamwork platforms/apps; H2. The use of means of electronic communication in an enterprise's internal communications depends on attributes such as the size of the enterprise, the nature of the business, the form of ownership, the ownership capital and the degree to which the company is computerized.

3.2. Results of the survey

One of the areas of interest, in the study undertaken, was internal communication in the enterprise using electronic communication means. A question was devoted to it, in which respondents were asked to indicate the degree of use of electronic communication means in internal communication in their enterprises. On the basis of literature, knowledge and own experience, a list of internal electronic communication means was compiled and each was assigned a scale from 0 to 5, with 0 indicating no such form of communication, and 5 indicating the highest degree of use of electronic communication means in the internal communication of the enterprise. A value of 3 on the five-point scale is interpreted as the average degree of use of electronic communication means in internal communication in the enterprise (Table 1).

Communication tools have been grouped according to the possibility of team collaboration or the lack of it or the negligible possibility of it. Team collaboration is provided, for example, by Office 365, Google Docs/Sheets, Ms Teams, Slack, Content Management Systems (CMS), SharePoint, Confluence, Zoho, Trello. Within these tools, it was necessary to divide them into those that guarantee not only planning, organizing and controlling collaboration (e.g. SharePoint, Confluence, Zoho, Trello) but also those that also allow synchronous communication using video (e.g. Ms Teams, Slack). In addition, from the tools for organizing the work of the team there are those dedicated to work in project teams (e.g. Zoho, Trello). A separate group is formed by office software with the possibility of team collaboration, e.g. Office 365, Google Docs/Sheets, due to the wider possibilities for office work than guaranteed by other electronic means of communication.

Other means of electronic communication within the organization on the list are characterized by the fact that they provide little or no opportunity for teamwork, e.g. external drives for storing and sharing documents. Among them, one can notice those that emphasize mainly one-way messages, without the possibility of interacting with the recipient e.g. newsletters or mailing, or interaction limited e.g. social networks.

Table 1.*Frequency of using of electronic communication in intra-company communication (N=255)*

Means of electronic communication	SCALE *						Mean value
	0	1	2	3	4	5	
E-mail	0%	4.9%	5.8%	17.3%	21.3%	50.7%	4.1
Office software with collaboration capabilities (e.g. Office 365, google docs/sheets)	5.3%	5.3%	8.4%	22.2%	24.9%	33.8%	3.8
External hard drives for document storage and sharing	6.2%	8.0%	12.0%	19.1%	29.8%	24.9%	3.6
Communicators for voice and video calls (e.g. Skype, zoom, whatsapp)	9.8%	4.9%	14.7%	20.9%	28.9%	20.9%	3.5
Electronic workflow systems	4.9%	6.2%	15.1%	25.3%	21.3%	27.1%	3.5
Text messaging (e.g. Gadu gadu, facebook, messenger)	14.7%	5.8%	12.4%	20.4%	22.7%	24.0%	3.5
Social networks (e.g. Facebook, linkedin)	11.1%	6.7%	15.1%	21.8%	22.7%	22.7%	3.5
Newsletters and mailing lists	13.3%	9.8%	13.3%	22.2%	24.4%	16.9%	3.2
Publicly available discussion forums, blogs, message boards on the internet	16.4%	12.4%	12.0%	19.6%	24.4%	15.1%	3.5
Company portals with discussion forums, blogs, message boards	15.6%	9.3%	10.7%	27.1%	21.8%	15.6%	3.3
Content management systems (cms) /wiki-type tools (e.g. Sharepoint, confluence)	16.0%	10.2%	11.1%	27.1%	20.4%	15.1%	3.3
Platforms/apps for teamwork (e.g., teams, slack)	14.7%	8.9%	15.6%	25.8%	19.1%	16.0%	3.2
Project and task management tools (e.g. Zoho, trello)	21.3%	7.6%	17.8%	20.4%	21.8%	11.1%	3.1

*The question was closed ended and used a scale from 0 to 5, with 0 indicating no use and 5 indicating the highest degree of means of electronic communications use in the organizational communication. A value of 3 on the five-point scale is interpreted as an average degree of electronic means of communications use in the organizational communication.

Presented in Table 1, the hierarchy of the means of electronic communication within the organization, was prepared based on the sum of respondents' answers given in items 5 and 4 on the Likert scale adopted in the question.

Source: own research.

The most popular means of internal communication in the organization using electronic means of communication is via e-mail (72%¹) (Tab. 1). Such a result was to be expected, if only because of the wide and easy availability of this way of exchanging information, but also the advantages of asynchronous communication, typical of this means of communication. There was no person among the respondents who would not use e-mail in internal organizational communication.

¹ In preparing the hierarchy of the most popular means of electronic communication within the organization, the sum of respondents' answers given in items 5 and 4 on the Likert scale adopted in the question was used, where 5 means the highest degree of intensification and 4 means a high degree of intensification in the use of the listed means of communication.

In second place, were office software with team collaboration capabilities (office application suite) (58.7%) (Tab. 1). They include a word processor, spreadsheet, presentation software, a forms tool and a simple drawing editor. The office application suite, which is available online, usually has a part available to the user in free and paid versions. The package also includes a calendar and mail client. However, these powerful groupware tools still do not use video-formatted contacts, but allow more interaction than external drives for document storage and sharing, which were identified by respondents as the third most used means of electronic communication within the organization (54.7%).

Instant messaging for voice and video calls (e.g., Skype, Zoom, WhatsApp), fostering interactions most similar to face-to-face communication, came in fourth place (49.8%). This may come as a surprise, especially since some of them provide opportunities for team collaboration.

Slight differences appear in the following indications of electronic communication means used for intra-organizational communication: electronic workflow system (48.4%), text messaging (e.g. Gadu Gadu, Facebook, Messenger) (46.7%) and social networks (e.g. Facebook, LinkedIn) (45.4%). They differ in terms of functionality. The former focuses on document exchange and is most often purchased by an organization and more secure to use. The latter two places are for short text messages, use images and videos, i.e. one-way messages, and are less secure due to their general accessibility.

The eighth place in the hierarchy of electronic communication means used for intra-organizational communication was taken by newsletters and mailings (41.3%). This form of communication is more associated with e-marketing and reaching external customers. However, it is also practiced towards employees, understood as internal customers. Newsletters provide information about what is going on in the company, and sent systematically, they are intended to build relationships between the organization and employees.

This was followed by publicly accessible discussion forums, blogs, message boards on the Internet (39.5%) and company portals with discussion forums, blogs, message boards (37.4%). What differs between the mentioned means of electronic communication is the degree of control by the employer. In the case of discussion forums and blogs, it is usually problematic who will run the company blog and what information can be posted on it so that it is interesting and does not violate the company's security policy. The company must also adopt procedures for responding to uncomfortable comments. According to HubSpot's research, blogs are now one of the most popular marketing communication channels. They are second only to social media as Top Marketing Channels in 2022 (hubspot.com). So it seems to be an effective way to communicate.

One of the final places on the list of electronic means of communication within an organization is occupied by Content Management Systems (CMS)/Wikis-type tools (e.g. SharePoint, Confluence) (35.5%). The penultimate place is occupied by teamwork platforms/apps (e.g. Teams, Slack) (35.1%).

In last place are project and task management tools (e.g., Zoho, Trello) (32.9%). Their lower popularity in the indications of respondents, may be due to the fact that not all work is based on project teams, and so the need to use them is far less than the other means of electronic communication.

Among the means of electronic communication within the organization, project and task management tools (e.g., Zoho, Trello) (21.3%), publicly available discussion forums, blogs, bulletin boards on the Internet (16.4%), Content Management Systems (CMS) / Wiki-type tools (e.g., SharePoint, Confluence) (16.0%), company portals with discussion forums, blogs, bulletin boards (15.6%) are not used by respondents.

The study was also interested in the attributes of the organization and their influence on the frequency of use of electronic means of communication (Tab. 2). No correlation was noted between the use of means of electronic communication with the scope of the company, the form of ownership of the company, the ownership capital and the respondent (manager, IT manager, owner, board member).

Table 2.

The degree of computerization of the company vs. the use of means of electronic communication in internal company communications

Means of electronic communication	Degree of computerization of the company	
	Correlation coefficient (Spearman's R)	Statistical significance (p)
Newslettery lub mailingi	0.173	0.009
Office software with collaboration capabilities (e.g. Office 365, google docs/sheets)	0.196	0.003
External hard drives for document storage and sharing	0.317	0.000
Communicators for voice and video calls (e.g. Skype, zoom, whatsapp)	0.197	0.003
Electronic workflow systems	0.294	0.000
E-mail	0.148	0.026
Social networks (e.g. Facebook, linkedin)	0.138	0.038
Publicly available discussion forums, blogs, message boards on the internet	0.157	0.018
Content management systems (cms) / wiki-type tools (e.g. Sharepoint, confluence)	0.169	0.011
Platforms/apps for teamwork (e.g., teams, slack)	0.155	0.020
Project and task management tools (e.g. Zoho, trello)	0.055	0.408
Text messaging (e.g. Gadu gadu, facebook, messenger)	0.095	0.115
Company portals with discussion forums, blogs, message boards	0.112	0.093

Source: own research.

Based on the values obtained for Spearman's R correlation coefficient and statistical significance, it should be noted that the correlation between the mentioned attributes of the organization and the use of electronic means exists mainly for the degree of computerization of the company (Table 2) and to a small extent for the size of the workforce.

The Spearman's R correlation coefficient (Rs) obtained indicates a very weak but clear and statistically significant (p) correlation of the degree of computerization of the company with the use of the following electronic means of intra-organizational communication: Social

networking sites (e.g., Facebook, LinkedIn) ($R_s = 0.138$; $p = 0.038$), e-mail ($R_s = 0.148$; $p = 0.026$), Teamwork platforms/apps (e.g. Teams, Slack) ($R_s = 0.155$; $p = 0.020$), Publicly available discussion forums, blogs, online bulletin boards ($R_s = 0.157$; $p = 0.018$), Content Management Systems (CMS) / wiki-type tools (e.g., SharePoint, Confluence) ($R_s = 0.169$; $p = 0.011$), Newsletters or mailing ($R_s = 0.173$; $p = 0.009$).

The Spearman's R correlation coefficient (R_s) obtained indicates a weak but clear and statistically significant (p) correlation of the degree of computerization of the company with the use of the following electronic means of intra-organizational communication: Collaborative office software (e.g., Office 365, Google Docs/Sheets) ($R_s = 0.196$; $p = 0.003$), Instant messaging for voice and video calls (e.g., Skype, Zoom, WhatsApp) ($R_s = 0.197$; $p = 0.003$), Electronic workflow systems ($R_s = 0.294$; $p = 0.000$), External drives for document storage and sharing ($R_s = 0.317$; $p = 0.000$).

Based on the value of Spearman's R correlation coefficient (R_s) and the level of statistical significance (p), no correlation is observed between the degree of computerization of the company and the use of the following electronic means of intra-organizational communication: Text messaging (e.g., Gadu Gadu, Facebook Messenger); Project and task management tools (e.g., Zoho, Trello); Company portals with discussion forums, blogs, message boards.

Spearman's R correlation coefficient (R_s) obtained indicates a weak but clear and significant (p) correlation between the size of a company's workforce and the use of e-mail in intra-organizational communication ($R_s = 0.190$; $p = 0.004$) and electronic workflow systems ($R_s = 0.196$; $p = 0.003$). In the case of the other electronic means of intra-organizational communication, listed in Table 2, no relationship is observed with the size of employment.

The results of the survey, presented in the paper, show that e-mail is a readily used means of communication. Unfortunately, the potential of tools designed for team and project work is untapped. Despite this, the results in Tab 1 show that the surveyed companies are eager to use electronic means of communication.

4. Summary and conclusions

Based on the surveys conducted, it can be noted that e-mail ranks first among electronic communication means, as it did in other studies before and during the pandemic (Stefaniuk, 2014, p. 58; Pawlak, 2018, p. 205; Biernacka, 2020). Voice and video calling communicators ranked further down (fourth). These results may come as a surprise on the one hand, since synchronous communication tools, which include voice and video call communicators, provide a way of communicating that is most similar to face-to-face communication (Ehsan et al., 2008; Xu, Liao, 2020). However, it should be noted that the question asked about the most popular means of electronic communication. The results may look different if respondents are asked to

determine the effectiveness of electronic communication means. This is illustrated by the results of the State of the Sector 2021-2022 survey (Biernacka, 2022).

It would seem that working online, would favor the popularity of platforms/apps for teamwork (e.g. Teams, Slack) and project and task management tools (e.g. Zoho, Trello). Unfortunately, they were indicated by respondents in the final places. The H1. adopted in the study can be positively verified only partially.

Of the company attributes listed in H2. only the degree of computerization affects the use of electronic communications, and to a small extent the size of the workforce. However, it is worth noting that there is no correlation between the degree of computerization of the company and the use of project management tools, text messaging and company portals with discussion forums, blogs, bulletin boards in communication. In contrast, the correlation of the size of the company's workforce with the use of electronic means of communication in intra-organizational communication relates only to e-mail and electronic workflow systems. The H2. adopted in the study can be positively verified only partially.

Publicly available electronic means of communication, e.g. Facebook, WhatsApp, as well as specialized ones under the control of the organization, e.g. company blogs, are equally often used in internal communication. For the sake of organizational security, it is worth paying attention to what content is transmitted by employees through publicly available applications or messengers.

One of the major difficulties accompanying the study of electronic communications is the lack of their disjointed classifications, and the use of the names of specific applications, communicators, etc., due to the development of technology, carries the risk that the results will quickly become outdated. The above situation also makes it difficult to conduct comparative studies.

However, it is worth the effort to identify the most popular means of communication in the organization. Knowing them will make it easier to choose the right mode of communication. Communication using electronic means of communication provides an opportunity to integrate distributed organizations (distributed organization) and an opportunity for people in regions with high unemployment rates to work. It is also a solution for times of crisis.

Acknowledgements

The research presented in the publication are a part of research carried out under the research grant "Management of intellectual capital under the conditions of the Fourth Industrial Revolution - determinants and consequences for national security and business" carried out at the Military University of Technology (UGB Nr 744/2020).

References

1. Biernacka, M. (2020). *Najskuteczniejsze narzędzia komunikacji wewnętrznej. Wyniki badania State of the Sector 2020*, Retrieved from: <https://beedifferent.pl/blog/najskuteczniejsze-narzedzia-komunikacji-wewnetrznej-wyniki-badania-state-sector-2020>, 5.09.2022.
2. Biernacka, M. (2022). *Skuteczna komunikacja wewnętrzna. Wyniki badania State of the Sector 2021/22*, Retrieved from: <https://beedifferent.pl/blog/skuteczna-komunikacja-wewnetrzna-badania-state-sector-202122>, 5.09.2022.
3. Cornelissen, J. (2010). *Komunikacja korporacyjna. Przewodnik po teorii i praktyce*. Warszawa: Oficyna a Wolters Kluwer business.
4. Cudo, A., Zabielska-Mendyk, E. (2019). Funkcjonowanie poznawcze a uzależnienie od Internetu - przegląd badań, *Psychiatria Polska*, nr 53(1), pp. 61-79. Retrieved from: https://researchgate.net/publication/31501135_Funkcjonowanie_poznawcze_a_uzaleznienie_od_Internetu_-_przeglad_badan_Cognitive_functions_in_Internet_addiction_-_a_review_Polish_and_English, 27.012.2022.
5. de Farias, S.A. (2010). Internal Marketing (IM): a literature review and research propositions for service excellence. *Brazilian Business Review*, Vol. 7, No. 2, pp. 99-115. Retrieved from: <http://dx.doi.org/10.15728/bbr.2010.7.2.6>, 5.09.2022.
6. Dobek-Ostrowska, B. (1999). *Komunikacja społeczna*. Wrocław: Astrum.
7. Ehsan, N., Mirza, E., Ahmad, M. (2008). Impact Of Computer-Mediated Communication On Virtual Teams- Performance: An Empirical Study, *World Academy of Science. Engineering and Technology International Journal of Electronics and Communication Engineering*, Vol. 2, No. 6, pp. 1194-1203. Retrieved from: <https://doi:10.5281/zenodo.1063126> fatcat:sub6e7ipcrajrenpbs7dxn7s3i, 5.09.2022.
8. Flanagan, A.J. (2020). The Conduct and Consequence of Research on Digital Communication. *Journal of Computer-Mediated Communication*, Vol. 25, Iss. 1, pp. 23-31, Retrieved from: <https://doi.org/10.1093/jcmc/zmz019>, 25.09.2022.
9. Grzenia, J. (2007). *Komunikacja językowa w Internecie*. Warszawa: PWN.
10. Hamilton, Ch. (2011). *Skuteczna komunikacja w biznesie*. Warszawa: PWN.
11. Jaworowicz, M., Jaworowicz, P. (2017). *Skuteczna komunikacja w nowoczesnej organizacji*. Warszawa: Difin.
12. Kobis, P. (2019). Człowiek w zespołach wirtualnych a bezpieczeństwo w zarządzaniu informacją. *Przegląd Organizacji*, nr 7(954), pp. 57-64. Retrieved from: <https://przegladorganizacji.pl/plik/5e092497e8765/po.2019.07.08.pdf>, 27.12.2022.
13. Kończak, J. (2020). Rola komunikacji korporacyjnej w Polsce. *Studia Medioznawcze*, nr 1, pp. 45-63. DOI:10.33077/uw.24511617.ms.2017.68.408.

14. Maruping, L., Agarwal, R. (2004). Managing team interpersonal processes through technology: a task-technology fit perspective. *Journal of Applied Psychology*, Vol. 89, No. 6, pp. 975-990. Retrieved from: <https://pubmed.ncbi.nlm.nih.gov/15584836/>, 27.12.2022.
15. Ober, J. (2013). Funkcja i rola efektywnej komunikacji w zarządzaniu. *Zeszyty Naukowe Politechniki Śląskiej, Organizacja i Zarządzanie*, nr 65, Nr kol. 1897, pp. 257-266.
16. Pawlak, K. (2018). Środki komunikowania się przedsiębiorstw z rynku NewConnect z interesariuszami. In: J. Woźniak, K. Pawlak, P. Zaskórski, *Technologie teleinformatyczne w gospodarce informacyjnej i komunikowaniu się współczesnych przedsiębiorstw. Perspektywa rynku NewConnect*. Warszawa: WAT.
17. Potocki, A. (2003). Metody rozwiązywania problemów i tworzenia innowacji oparte na odpowiednio zorganizowanej komunikacji. In: A. Potocki, R. Winkler, A. Żbikowska, *Techniki komunikacji w organizacjach gospodarczych* (pp. 163-249). Warszawa: Difin.
18. Shwartz-Asher, D., Ahituv, N. (2019). Comparison between Face-to-Face Teams and Virtual Teams with Respect to Compliance with Directives. *Journal of Service Science and Management*, Vol. 12, No. 4, pp. 549-571. Retrieved from: [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkozje\)\)/journal/paperinformation.aspx?paperid=93379](https://www.scirp.org/(S(351jmbntvnsjt1aadkozje))/journal/paperinformation.aspx?paperid=93379), 27.12.2022.
19. Stankiewicz, J. (2006). *Komunikowanie się w organizacji*. Wrocław: Astrum.
20. Stefaniuk, T. (2014). *Komunikacja w zespole wirtualnym*. Warszawa: Difin.
21. Steinfield, Ch., Yang, Ch., Huysman, J.M., David, K. (2002). *Communication and Collaboration Processes in Global Virtual Teams. International Networked Teams for Engineering Design (INTEnd) Project Summary Report*. East Lansing, Michigan: Michigan State University. Retrieved from: http://www.researchgate.net/publication/277283706_communication_and_collaboration_process_in_global_virtual_teams, 15.09.2022.
22. Tarczydło, B. (2009). Wewnętrzne public relations przedsiębiorstwa, wybrane przykłady. In: D. Tworzydło, T. Chmielewski (Ed.), *Problemy i wyzwania public relations w świetle badań i praktyki* (pp. 191-204). Rzeszów: WSIZ.
23. Trębecki, J. (2012). Klasyfikacja narzędzi komunikowania wewnętrznego – nowe propozycje. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Poznaniu*, nr 249, pp. 40-48.
24. Varey, R.J. (1995). Internal Marketing: A Review and Some InterDisciplinary Research Challenges. *International Journal of Service Industry Management*, Vol. 6, No. 1, pp. 40-63, Retrieved from: https://www.researchgate.net/publication/235269288_internal_marketing_a_review_and_some_interdisciplinary_research_challenges, 5.09.2022.
25. Widarowska, D. (2019). *Komunikacja wewnętrzna a zarządzanie firmą - narzędzia oraz metody*. Retrieved from: <https://brandnewportal.pl>, 5.09.2022.
26. Wojcik, K. (2011). *Public relations, wiarygodny dialog z otoczeniem*. Warszawa: Placet.

27. Xu, K., Liao, T. (2020). Explicating Cues: A Typology for Understanding Emerging Media Technologies. *Journal of Computer-Mediated Communication*, Vol. 25, Iss. 1, pp. 32-43. Retrieved from: <https://doi.org/10.1093/jcmc/zmz023>, 5.09.2022.
28. Zajkowska, M. (2009). Komunikacja wewnętrzna jako element systemu zintegrowanej komunikacji marketingowej. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, nr 559, Ekonomiczne Problemy Usług, nr 42*, pp. 210-216.

EFFECTS OF INVESTMENT FUNDING FROM REGIONAL OPERATIONAL PROGRAMMES (AS ILLUSTRATED BY THE ROP OF THE PODKARPACKIE VOIVODESHIP 2014-2020)

Teresa MIŚ

University of Rzeszow, Institute of Economics and Finance; tmis@ur.edu.pl, ORCID: 0000-0002-5164-0804

Purpose: The aim of this article is to assess the importance of European Union funds in the development of the regions, with an emphasis on the benefits of obtaining funding under the Regional Operational Programme (ROP) for the Podkarpackie voivodship.

Design/methodology/approach: In collecting empirical material for the article, the method of economic and general statistics was used. The temporal scope of the research covers the years 2014-2020, some issues in the field of the effects of cohesion policy support for regional development were shown in the years 2004-2020. The rationale for the location of the research is the peripheral location of the Podkarpackie Voivodeship and the related problems concerning the low level of economic growth and development, the lowest entrepreneurship rate, the low level of income of local governments and residents.

Findings: The research has shown that the analysed province has narrowed the gap to the national average, thanks to investments in the development of technical and social infrastructure, renewable energy sources, innovation in enterprises and improvements in the quality of human and social capital.

Originality/value: The article presents the use of EU financial resources supporting cohesion policy by the Podkarpackie local government in the form of the Regional Operational Programme 2014-2020 and the effects of the support based on selected indicators, including the author's absorption indicator.

Keywords: EU funds, cohesion policy, regional development.

Category of the paper: Research paper.

1. Introduction

Today, in the world of VUCA (volatility, uncertainty, complexity and ambiguity), i.e. rapid change and uncertainty, new challenges arise in the search for and implementation of innovative solutions and tools that reconcile the conflicting interests and effects of changes at local, regional, national and global levels.

The new European Green Deal as a continuation of the Europe 2020 strategy creates a lot of hope for the search for new solutions or models of development to support sustainability (Matyka, 2019, pp. 308-314). Currently, the most important document is the new European Green Deal strategy, i.e. the European Union's growth strategy to 2050, a blueprint for building a sustainable EU economy and delivering a green and digital transformation that is equitable and inclusive. It contains many issues dedicated to the development of the regions in the form of continued financial support through regional operational programmes as tools for investment and growth¹.

The use of EU funds has provided many regions with a wide range of investment opportunities that significantly support economic growth. Skilful use of these funds makes it possible to unleash the economic potential of the region, which is a source of sustainable development. The use of the funds is a challenge faced by both the institutions responsible for implementing the programmes and their recipients. The attitudes and knowledge of these entities constitute the potential necessary to achieve success in the development of a region (Katoła, 2012, p. 176; Miś, 2008, p. 140). Funding from the European Union broadens the functioning and opportunities for economic activity as well as the creation and implementation of new and innovative ideas, and thus contributes to the economic growth of the country as a whole (Szuszkiewicz-Idziaszek, 2019, p. 89; Waniak-Michalak et al., 2020, p. 7). Financial capital from EU funds allows regions with development deficiencies in the economy to catch up with the standards imposed by the European Union. The implementation of a cohesion policy does not guarantee that support for less competitive regions will be able to eliminate their problems, while the absence of such a policy will certainly worsen the situation of these regions (Oręziak, 2020, p. 98). The Regional Operational Programme (ROP) is concerned with broadening the investment offer of companies, influencing their needs for expansion of their departments related to modernisation and research. Like the other programmes, it helps to build the competitiveness of companies and to conquer hitherto unattainable sales markets. In addition, it finances participation in numerous courses and internships, thereby creating jobs for the unemployed and intellectual capital for entrepreneurs (Kasprzak, 2014, p. 252; Sikora-Gaca et al., 2018, pp. 62-68).

Cohesion policy, does not guarantee the reduction of disparities, but stimulates changes for the efficient use of endogenous resources and the improvement of quality of life. EU funds are intended to improve indicators for assessing the socio-economic level of development of regions (Miś, 2021, p. 178). The implementation of cohesion policy priorities by regional and local communities benefiting from European funds makes it possible to expect that objectives related to global issues, including low-carbon economy, climate change prevention, poverty reduction, improved quality of life, etc., will be implemented at the regional and local level.

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an Action Plan for the Development of Organic Production, Brussels, 25, 3, 2021, COM(2021) 141.

(Holden et al., 2017, pp. 213-226; Lugo-Morin, 2016, pp. 345-356). New key elements of the European Union's cohesion policy reform signal the need to improve the quality of life by supporting local and regional development with particular attention to the role of entrepreneurship and smart specialisations (Fiaschi et. al., 2018, pp. 386-423; McCann, Ortega-Argilés, 2016, pp. 537-552). It has been indicated that smart specialisations in the Podkarpackie Region include aerospace, information and telecommunications (ICT), automotive industry and improving the quality of life of the population by allocating EU funds for activities related to infrastructure improvement and development, innovative solutions in every field, e.g. agriculture and rural areas. From the perspective of cohesion policy, these initiatives are very important. The acquisition and proper allocation of European Union funds is of fundamental importance for improving the competitiveness of peripheral regions, delayed in their development, such as the Podkarpackie region. In this context, it is justifiable to undertake research into the evaluation of the use of EU funds in this region.

2. Methods

The empirical material used in the study concerns the Podkarpackie Voivodeship in comparison to other regions and the country. The numerical data comes from the Ministry of Funds and Regional Policy and the Central Statistical Office in Warsaw. The temporal scope of the research covers the European Union's 2014-2020 programming period. Indicators for assessing the level of socio-economic development are presented for the period 2014-2020, and certain issues related to cohesion policy and the effects of support for regional development cover sixteen years (2004-2020). The collected and structured empirical material was compiled in tabular and graphical form, using the descriptive method and the comparative analysis method.

The study of the use of European Union funds by the Podkarpackie local government is justified by the fact that, apart from its biggest impact on socio-economic changes at the regional and local level, it is a significant beneficiary of these funds. In the 2014-2020 period, the participation of local governments increased to 40%; in the 2007-2013 programming period it was 25% of the total amount of EU funds in Poland.

The following indicators were used to assess the use of EU funds by the Podkarpackie local government in the implementation of cohesion policy:

- GDP per capita to assess the level of development of the regions (this is the primary indicator taken into account by the EC when assessing the socio-economic situation of a region and the possible need for funding),
- amount of investment expenditure at current prices per capita in PLN,
- amount of European Union funds per capita (in PLN),

- the level of use of funds under the ROP 2014-2020,
- the rate of change and the absorption rate.

The substantive part of the article presents the results of research illustrating changes in Gross Domestic Product and investment expenditures per capita in Podkarpackie in comparison with other voivodships and the whole country, as well as the scale of utilisation of European Union funds supporting cohesion policy by the Podkarpackie local government. Attention was mainly paid to the Regional Operational Programme, which was presented in the tables in order to clearly juxtapose the Podkarpackie region with other regions in the country. The results of the research into the absorption rate and benefits of the use of European Union funds by the Podkarpackie local government were also presented in this form.

This article proposes an indirect measure for assessing the added value created by EU funds, i.e. the absorption rate. This indicator shows the actual share of a given region in the absorption of funds in the amount of support in relation to the total funds of the whole region. It indicates the involvement of the local authority in raising funds for the implementation of activities related to improving the quality of life of the inhabitants, i.e. initiatives undertaken to mobilise endogenous human and natural resources, infrastructure, social, environmental and cultural investments, etc. The indicator should be higher than 1; if the values are below 1 it means lower absorption of funds for socio-economic improvement than the region's potential.

3. Results

One of the most important criteria adopted for the classification of individual voivodeships in Poland in terms of their level of development and the related possibility of obtaining funding from the European Union under the cohesion policy is the Gross Domestic Product (GDP) per capita. The importance of Podkarpackie in generating Gross Domestic Product (GDP) is lower, as it does not exceed the total GDP of Poland. However, it should be stated that Poland's accession to the European Union has had a significant impact on improving the situation in both Podkarpackie and the whole country in terms of this indicator. In each of the voivodeships, the value of GDP per capita increased by more than 30% over six years (Table 1), which is a positive phenomenon. It should be added that there are some differences in terms of the value of this indicator between individual voivodeships, with the highest growth in the period 2014-2020 in the Łódzkie and Małopolskie voivodeships and the lowest in the Śląskie voivodeship. The value of the GDP per capita indicator in Podkarpackie is very low compared to other voivodeships - the penultimate place in the country (after Lubelskie), with a value 56,300 PLN lower than in Mazowieckie. This confirms that the Podkarpackie Voivodeship should receive funding from European Union funds under the cohesion policy in the years 2021-2027. A study by Miś (2021) shows that in the voivodeships of Eastern Poland (including Podkarpackie

Voivodeship), the value of the GDP per capita indicator in the years 2004-2020 did not exceed the average value for the country.

Table 1.

Investment expenditures and Gross Domestic Product per capita in Podkarpackie compared to the whole country in 2014-2020

Voivodeships	Total investment expenditure per 1 inhabitant (in PLN)			Gross Domestic Product per capita (in PLN)		
	2014	2020	Dynamics, 2014 = 100	2014	2020	Dynamics, 2014 = 100
dolnośląskie	7 602	10 394	136,7	49 717	67 148	135,1
kujawsko-pomorskie	5 310	6 267	118,0	36 232	49 439	136,5
lubelskie	4 887	6 065	124,1	31 186	41 315	132,5
lubuskie	4 712	5 910	125,4	37 644	49 394	131,2
łódzkie	6 469	6 962	107,6	41 751	58 840	140,9
małopolskie	5 554	7 075	127,4	39 568	55 448	140,1
mazowieckie	10 316	12 955	125,6	71 125	98 237	138,1
opolskie	5 717	6 791	118,8	36 182	47 723	131,9
podkarpackie	5 339	6 217	116,4	31 576	41 937	132,8
podlaskie	5 758	7 196	124,9	32 461	44 522	137,2
pomorskie	6 574	7 447	113,3	42 346	57 669	136,2
śląskie	6 274	7 374	117,5	46 167	60 091	130,2
świętokrzyskie	3 913	4 930	125,9	32 613	43 646	133,8
warmińsko-mazurskie	4 634	5 851	126,3	31 958	42 566	133,2
wielkopolskie	6 452	7 924	122,8	47 679	66 208	138,9
zachodniopomorskie	6 091	8 822	144,8	37 423	50 700	135,5
Poland	6 516	8 068	123,8	44 466	60 663	136,4

Source: own elaboration on the basis of the data from Statistics Poland in Warsaw.

In addition to GDP per capita, investment expenditures per capita are a very important indicator, which also increased over the six-year period - the most, by nearly 45% in the Zachodniopomorskie Voivodeship, and the least, by only 7.5% in the Łódzkie Voivodeship (Table 1). In Podkarpackie voivodeship, the indicator in 2020 was more than 16% higher than in 2014, but as much as twice as low as in the Mazowieckie voivodeship.

Despite undertaking the significant investments, there are still considerable disparities between countries and their regions. The imbalance can be seen mainly within the EU Member States, where the distance between the least and most developed is widening even further (Świstak, 2018, p. 34).

For Podkarpackie, cohesion policy is a unique development opportunity, as its priorities in the 2014-2020 financial perspective are (according to the n+3 rule, the current perspective lasts until the end of 2023): smart growth, sustainable growth and inclusive growth. From the data in Table 2, it can be seen that the Podkarpackie local government has obtained slightly more funding per capita in the implementation of the European Union's cohesion policy compared to other voivodeships, but less than the national average. In comparison to other Eastern Polish voivodeships, Podkarpackie was ranked fourth, ahead of only świętokrzyskie. The highest amount of support per 1 inhabitant was obtained by local governments in the Warmińsko-Mazurskie (39% more than in Podkarpackie) and Zachodniopomorskie Voivodeships, while

the lowest amount was obtained by local governments in the Wielkopolskie and Śląskie Voivodeships.

This article proposes an indirect measure for assessing the added value created by EU funds, which is the absorption rate. This indicator shows the actual share of individual Polish regions in the absorption of funds in the amount of support in relation to the total funds of the whole region. The highest absorption level of EU funds occurred in the Warmińsko-Mazurskie voivodeship: absorption rate of 1.31 (Table 2). It is important to remember here that in this voivodeship has a low GDP per capita as well as the highest amounts of funding per capita. This is a positive phenomenon and shows that the authorities of this voivodeship exert influence on the improvement of the quality of life of its inhabitants by taking initiatives for investments financed under cohesion policy. A high level of absorption of EU funds is also found in Podlasie, Lubelskie and Zachodniopomorskie. Values of the indicator below 1 show a lower absorption of funds for socio-economic improvement than the region's potential. In Podkarpackie, the value of the absorption indicator is just below 1; still, the local authorities need to become more active in applying for EU funding for projects in the next programming period.

Table 2.

European Union funds per capita obtained by the Podkarpackie local government compared to the whole country in the implementation of cohesion policy in 2014-2020 and the absorption rate

Voivodeships	Amount of European Union funding per capita		Absorption rate
	in PLN	w %	
dolnośląskie	12 947,2	89,1	0,89
kujawsko-pomorskie	13 281,4	91,4	0,91
lubelskie	15 537,8	107,0	1,04
lubuskie	12 680,0	87,3	0,86
łódzkie	13 682,4	94,2	0,92
małopolskie	12 089,7	83,2	0,85
mazowieckie	12 248,2	84,3	0,87
opolskie	12 124,4	84,3	0,82
podkarpackie	13 886,9	95,6	0,96
podlaskie	15 490,0	106,6	1,05
pomorskie	13 228,5	91,1	0,94
śląskie	11 897,8	81,9	0,80
świętokrzyskie	13 489,3	92,9	0,90
warmińsko-mazurskie	19 304,7	132,9	1,31
wielkopolskie	10 155,9	69,9	0,71
zachodniopomorskie	17 173,2	118,2	1,17
Poland	14 525,5	100,0	-

Source: own elaboration on the basis of the data from Statistics Poland in Warsaw (as of June 14, 2022).

As Podkarpackie voivodeship financed its investments from the ROP to the greatest extent (and to a greater extent than on the national level), Map 1 shows the percentage of agreements signed not only in Podkarpackie, but in all regions of the country. The largest number of ROP projects was implemented in the Pomorskie Voivodeship. The Opolskie, Wielkopolskie and Mazowieckie voivodeships also perform well: the value of EU funds in signed agreements

reaches 74-78%. The fewest ROP projects were implemented in Zachodniopomorskie and Kujawsko-Pomorskie. Podkarpackie and Lubelskie regions signed the most agreements among the regions of Eastern Poland. The areas of ROP funding with expenditure of 30 to 32% of the available allocation are: employment, support for SME development, education and infrastructure development. The indicator shown on figure 1 is very important, as it shows the activity of the voivodeship self-governments in attracting funding, which has been low to date. Moreover, projects implemented under all 16 regional programmes reach a value of 131.6 billion PLN, including 90.1 billion PLN from the EU. The largest pool of EU money (76 billion PLN, or 32% of the value of signed contracts) was obtained to support sustainable transport. Significant amounts have also been committed to investments promoting the transition to a low-carbon economy (32 billion PLN, or 13% of the value of signed contracts), as well as to strengthening the research and development sphere and developing innovation (22 billion PLN, or 9% of the value of contracts).

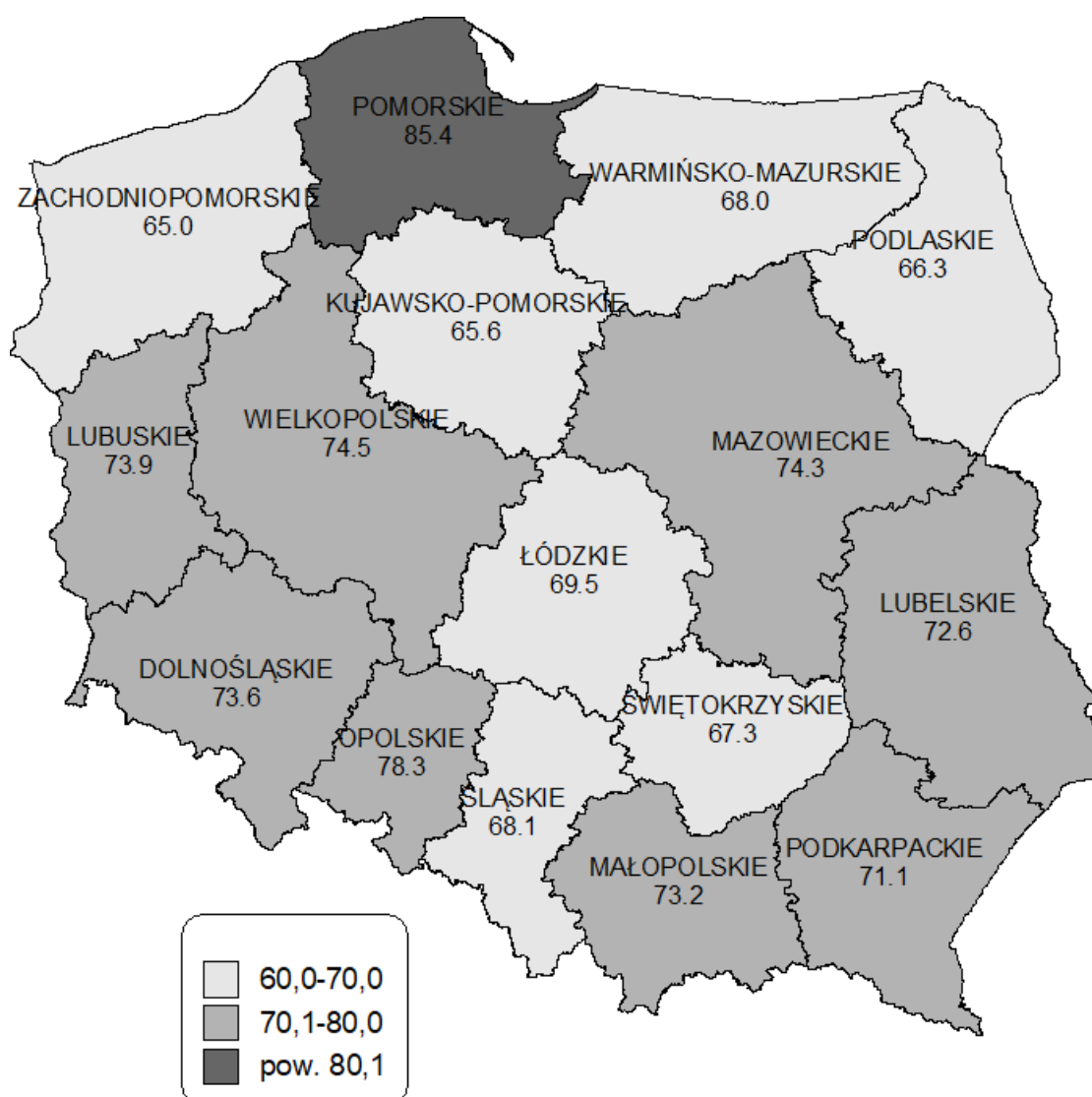


Figure 1. Level of use of funds under ROP 2014-2020, contracts signed (in %).

Source: own compilation based on data from the Ministry of Funds and Regional Policy.

Investments in improving territorial accessibility, such as the construction and modernisation of road, rail and air networks, accounted for the largest share of the money used under the ROP 2014-2020. A significant pool of EU money was also allocated to support small and medium-sized enterprises, the implementation of investments in social infrastructure and the development of human and social capital. This was followed by investments in support of innovation, research and development, and projects of environmental nature, including actions undertaken in the field of renewable energy sources, wastewater treatment, air quality improvement and waste management.

According to data from the Ministry of Funds and Regional Policy (2022), in the years 2004-2020, in the regional arrangement, the highest level of payments of cohesion policy funds per capita occurred in the Warmińsko-Mazurskie (19.6 thousand PLN) and Podkarpackie (16.6 thousand PLN) voivodeships, while the lowest in the Wielkopolskie (10.5 thousand PLN) and Kujawsko-Pomorskie (11.2 thousand PLN) voivodeships. In the ratio of funds to GDP in the years 2004-2020, the Warmińsko-Mazurskie (3.5%) and Podkarpackie (3.1%) voivodeships were the leaders. In the analysed period of sixteen years, the greatest EU support was allocated to projects in the field of basic infrastructure development, including transport infrastructure, energy, environmental protection and social infrastructure. In most voivodeships, expenditure on this category accounted for 60% of total funds (from 55.7% in the Kujawsko-Pomorskie voivodeship, to 66.6% in the Mazowieckie voivodeship). The remaining funds were earmarked for direct support for enterprises and the development of human resources. The structure of support was similar in individual regions. The share of expenditure the development of human resources ranged from 13.9% in the Mazowieckie Voivodeship to 22.4% in the Świętokrzyskie Voivodeship, and the share of expenditure for direct support for the enterprise sector ranged from 16.4% in the Lubuskie Voivodeship to 24.9% in the Podlaskie Voivodeship (Wpływ polityki..., 2022, pp. 6-7). Investments financed by EU funds constitute a significant part of public investments in the Podkarpackie Voivodeship - in 2020 their share was as high as 44% of total public investments, with the average for the country being 37.8%. In 2020 GDP per capita (in PPS) in Podkarpackie voivodeship was more than 51% of the EU-27 average. In the period 2004-2020, the distance between Podkarpackie and the EU-27 measured by GDP per capita (in PPS) decreased by 13.9%, of which 32.3% was due to the implementation of cohesion policy. Thus, thanks to EU funding, the gap in the level of economic development separating Podkarpackie from the EU-27 average has gradually narrowed. In the period 2004-2020, Podkarpackie voivodeship developed at an average rate of 3.7% (in constant prices). EU-funded infrastructural outlays and direct support to businesses contribute to a significant upturn in investment activity. It is estimated that in 2020 the investment rate (ratio of gross capital expenditures to GDP) was 4.3% higher than in the absence of EU funds. In the year of its accession to the EU (2004), the Podkarpackie Voivodeship had an employment rate of 58.9% for people aged 20-64, while in 2020 – 70.0%, and is projected to reach over 81% in 2029. Around 25% of the growth recorded over the period was due to the impact of EU funds.

The positive effect of cohesion policy can be seen in the creation of new jobs, the improvement of workers' skills and their better adaptation to changing labour market conditions. As of 2020, the number of jobs created in the Podkarpackie voivodeship as a result of investments co-financed by the EU budget is estimated at over 32,000. The positive impact of EU funds is also visible in the reduction of the unemployment rate. The unemployment rate of people aged 15+ in the Podkarpackie Voivodeship in the year of accession to the EU (2004) was 15.1%, in 2014 – 14.6%, and in 2020 – 9,1%. To a large extent, EU funds have contributed to the reduction of the unemployment rate; it is estimated that investment funding under the cohesion policy have resulted in a reduction of the unemployment rate in the region by around 1.3% in 2020 and by 1.9% on average per year in the period 2004-2020 (Wpływ polityki..., 2022, p. 44).

The specialisation of regions represents an opportunity to increase competitiveness from the supra-regional perspective. Cooperation between regions with different specialisations influences the development and greater competitiveness of regions with lower development dynamics (Camagni, Capello, 2013, pp. 355-389). Regional specialisations in Podkarpackie are implemented according to the Regional Innovation Strategy, and their effects are visible in the case of the ICT specialisation by improving the accessibility of companies to broadband Internet – in 2020 more than 97% of companies in the voivodeship were equipped with this type of Internet connection. The ICT sector received the biggest support (140 projects with funds of nearly 150 million PLN), followed by projects related to the quality of life (79 projects with funds of approximately 125 million PLN), the automotive sector (68 projects with funds of over 91 million PLN), and the aviation and aerospace specialisation the least – 35 projects with funds of over 58 million PLN. More than 2.1 billion € (9.63 billion PLN) is the value of the funds that the Podkarpackie Voivodeship had at its disposal in the 2014-2020 ROP. The closure of programme will last until the end of 2023, but the inhabitants are already benefiting from the effects of the implementation of many strategic investments, e.g. under the first priority axis 'Competitive and innovative economy', more than 1,815 enterprises have obtained support to implement innovations. To achieve climate goals, the programme has installed 180 MW of additional renewable energy capacity in the region, supported 41 waste water treatment plants, 57 cultural sites and 82 historical monuments. For social cohesion, more than 1,000 additional jobs were created in social care facilities and 1,368 jobs in social enterprises. 35,700 people at risk of poverty and social exclusion were covered by the programme's support services.

4. Discussion

The level of economic development of individual Polish regions varies both due to different urbanisation and historical conditions. In the 2007-2013 programming period, ROP in Poland accounted for nearly 25% of total cohesion policy funding, ranging from 17.3% in the Mazowieckie voivodeship to 31.2% in the Kujawsko-Pomorskie voivodeship, with a variation rate of over 40% in this share (Dubownik et al., 2019, pp. 32, 47, 162).

Data from the Ministry of Funds and Regional Policy (2022) shows that investments co-financed by EU funds constitute a significant part of public investment in Poland. In the period 2004-2020, Poland achieved the second highest cumulative GDP growth among EU Member States (by 84.6%, with an EU-27 average of 18.2%), second only to Ireland. The relatively high economic growth recorded in Poland in the 2004-2020 period (annual average of 3.7%, against 1.0% in the EU-27) was largely due to the use of EU funds. During the economic crisis, EU funds acted as a shock absorber to mitigate the effects of external shocks and helped to implement national policies to stabilise public finances. EU funds played a similar role in 2020 and now, limiting the negative impact of the Covid-19 pandemic on the Polish economy. The funds available under cohesion policy help to partially halt the process of regional differentiation. This is due to their stronger impact in poorer regions than in more developed ones, as well as to the fact that the largest per capita allocations are designated for these regions. Although the biggest determinant of the scale of impact of cohesion policy on development is the size of the funds, other factors also play a role, e.g. the internal potential of the regions and the degree to which the thematic structure of the funds matches their needs. Gross capital expenditures (in current prices) in 2020 amounted to 386.3 billion PLN and were more than twice as high as in the year of EU accession. The implementation of cohesion policy in Poland has contributed to an increase in the scale of investment in the economy. The mechanism for the impact of EU funds on investment growth consisted in stimulating public investment, with large infrastructure projects being implemented. Substantial resources were allocated to grants and investment loans for companies. In 2020, the impact of cohesion policy on gross capital expenditures were estimated at around 24% (74.3 billion PLN). Over the whole period 2004-2020, the impact of cohesion policy on the investment rate was positive (Wpływ polityki..., 2022, pp. 8-17).

The cohesion evaluation report published by the European Commission shows that cohesion policy has contributed to reducing territorial and social disparities between EU regions. Thanks to the funding provided by the policy, the level of GDP per capita in less developed regions will increase by 5% in 2023. The same investment has also helped to reduce the gap in GDP per capita between the poorest and richest regions by 3.5%. The report also points out that, thanks to its flexibility, cohesion policy has provided much-needed and rapid support to Member States and local and regional authorities during the economic downturn and the most

severe health crisis of recent years. From the 2007-2013 programming period to the 2014-2020 programming period, investment in cohesion policy increased from the equivalent of 34 to 52% of total public investment. Cohesion policy has contributed to making a real difference for many EU regions and citizens. It has helped to invest in more balanced and sustainable growth with long-term benefits. Support has been given to technical and digital infrastructure, education and training, SMEs and ecological transformation. More recently, cohesion policy has helped EU regions address the challenges of the COVID-19 pandemic and its impact. The new Cohesion Policy programmes for 2021-2027 represent further investment for the benefit of regions and citizens, in close coordination with the financial potential of the Next Generation EU package. Over the next years, Cohesion Policy will continue to support equitable and sustainable development in all EU regions and, simultaneously, green and digital transformation through: a comprehensive and targeted approach to development; funding, governance, coherence and synergies with national policies; area-based, multi-level and partnership policies that are tailored to the needs of the most vulnerable territories; and continued adaptability to new and unexpected challenges (Eighth Report on Economic, 2022, pp. 3-6). It is important to remember that each region has potential that can be exploited by four main domains: economy, science, administration, society. Regions differ in the availability of natural resources, research and development activities, technology, level of infrastructure and level of entrepreneurship. This situation indicates that some regions will develop more slowly precisely because of their poorer starting position. Such a process, however, is not the rule. This is confirmed by the so-called ‘success stories’, which describe the economic success of peripheral regions (Fabińska, 2020, p. 23). Successful regional policy requires a reorientation towards an integrated territorial approach. Such an approach is based on the assumption that each place has its own economic, social, cultural and institutional specificities, and that optimal intervention in their development factors strengthens its territorial capital. It is understood as a particular type of human capital, the quality of which depends on three interrelated factors of economic, social and environmental development (Churski et al., 2018, pp. 70-98).

According to the European Investment Bank (EIB), between 2014 and 2020, the bank supported investments, linked to the implementation of cohesion policy, worth around 630 billion € in the so-called cohesion regions, equivalent to around 16% of the EU’s GDP. The report indicates that by 2040, investments supported by the 2021-2027 cohesion policy will increase EU GDP by around 4.7 per cent and lead to the creation of an additional 3.2 million jobs (EIB Report, 2022, p. 4).

In conclusion, cohesion policy does not guarantee the reduction of disparities, but it does stimulate change for the efficient use of endogenous resources and the improvement of quality of life. EU funds are intended to improve indicators for assessing the socio-economic level of development of regions.

5. Summary

Poland's accession to the European Union has created opportunities to benefit from funds under the cohesion policy. This in turn has contributed, among other things, to an increase in Gross Domestic Product and investment expenditures per capita. Research has shown that the value of Gross Domestic Product per capita in Podkarpackie voivodeship increased between 2014 and 2020. This is a very positive phenomenon, but the value of this indicator did not exceed the average value for the country, which means that the voivodeship should continue to receive funding from the European Union as part of cohesion policy. Hence, between 2021 and 2027, the Podkarpackie local government should obtain more funding in terms of regional development. As part of the ROP 2014-2020, many investments have been made in technical infrastructure, social infrastructure, renewable energy sources, etc. The Warmińsko-Mazurskie Voivodeship self-government obtained the most funds, which is confirmed by the analysis of the absorption rate, which had the most favourable values for Warmia and Mazury. This indicator for Podkarpackie presents values very close to 1, which indicates that this voivodeship has reduced the distance to the national average, but needs further support under EU cohesion policy. It is therefore a positive development that the new EU strategy, the European Green Deal, provides substantial funding for the development of regions, including peripheral ones, such as Podkarpackie Voivodeship.

References

1. Camagni, R., Capello, R. (2013). Regional Innovation Patterns and the EU Regional Policy Reform. Towards Smart Innovation Policies. *Growth and Change*, vol. 44, no. 2, pp. 355-389.
2. Churski, P., Herodowicz, T., Konecka-Szydłowska, B., Perdał, R. (2018). Redefining regional development factors in the light of socio-economic megatrends. *Regional and Local Studies*, 3(73). Warsaw: EUROREG, UW, pp. 70-98.
3. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an Action Plan for the Development of Organic Production, Brussels, 25, 3, 2021, COM(2021) 141.
4. Dubownik, A., Rudnicki, R., Szyda, B., Adamiak, Cz., Kaliński, K. (2019). European Union funds as a factor of regional development. *Cycle Studies Monographs*, vol. 1/193, Warsaw: PAN KPZK.
5. *Eighth Report on Economic, Social and Territorial Cohesion*, https://ec.europa.eu/regional_policy/pl/newsroom/, 17.08.2022.

6. *European Inewst Bank Current Report, No. 18, 2022.*
7. Fabińska, M. (2020). *Regional capital a zarządzanie innowacyjnym rozwojem regionu*. Łódź: Wyd. Uniwersytetu Łódzkiego.
8. Fiaschi, D., Lavezzi, A.M., Parenti, A. (2018). Does EU cohesion policy work? Theory and Evidence. *Journal of Regional Science*, vol. 58, pp. 386-423.
9. Holden, E., Linnerud, K., Banister, D. (2017). The Imperatives of Sustainable Development. *Sustainable Development*, 25, pp. 213-226.
10. Kasprzak, R. (2014). Financing from European funds. In: J. Szlęzak- Matusiewicz, P. Felis (ed.), *Financing of the enterprise theoretical and practical approach* (pp. 242-280). Warsaw: Wolters Kluwer Publishing House.
11. Katoła, A. (2012). Wpływ wykorzystania funduszy unijnych na wzrost konkurencyjności gmin. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania, nr 25*. Szczecin, pp. 161-177.
12. Lugo-Morin, D.R. (2016). Dynamics of Rural Communities Under Climate Change. *Sustainable Development*, 24, pp. 345-356.
13. Matyka, M. (2019). Regional diversification of the intensity of implementation of selected RDP 2014-2020 measures against the background environmental and organizational conditions. *Rocznik Naukowe SERiA, vol. XXI, z. 3*, pp. 308-314, DOI: 10.5604/01.3001.0013.3534.
14. McCann, P., Ortega-Argilés, R. (2016). Smart specialisation, entrepreneurship and SMEs: issues and challenges for a results-oriented EU regional policy. *Small Business Economics*, 46(4), pp. 537-552.
15. Miś, T. (2008). The role of local institutions in the process of absorption of EU funds for agriculture in the opinion of farmers of south-eastern Poland. *Więś i Rolnictwo, No. 3(140)*. Warsaw: IRWiR PAN, pp. 130-141.
16. Miś, T. (2021). The significance of European Union funds for the development of the regions of Eastern Poland. *Zeszyty Naukowe Politechniki Śląskiej, Organizacja i Zarządzanie, z. 152*, pp. 169-179, <http://dx.doi.org/10.29119/1641-3466>.
17. Oręziak, L. (2020). *Finance of the European Union and the Eurozone*. Warsaw: Oficyna Wydawnicza SGH.
18. Sikora-Gaca, M., Piechowicz, M., Kleinowski, M. (2018). *Managing European Funds in Poland*. Warsaw: Difin.
19. Świątek, M. (2018). *Regional policy of the European Union as public policy vis-à-vis the need to optimise public action*. Kraków: Jagiellonian University Publishing House.
20. Szuszkiewicz-Idziaszek, A. (2019). *European Funds in financing small and medium-sized enterprises*. Gorzów Wielkopolski: Jakub z Paradyża Academy in Gorzów Wielkopolski.
21. Waniak-Michalak, H., Michalak, J., Turała, M. (2020). *Loan and Guarantee Funds, Development, Performance, Stability*. Łódź: Wyd. Uniwersytetu Łódzkiego.

OPERATIONAL URBAN PLANNING – ZONE D'AMÉNAGEMENT CONCERTÉ

Ada NAWROCKA

Politechnika Bydgoska im. Jana i Jędrzeja Śniadeckich; ada.nawrocka@pbs.edu.pl,
ORCID: 0000-0001-8895-4332

Purpose: Particular attention of this article will be given to a selected instrument of operational urban planning which has a French origin - Zone d'Amenagement Concerte_ZAC. The study of this instrument will be preceded by an introduction about the principles of operational urban planning and the system of tools among which the ZAC operates.

Design/methodology/approach: The author based the article on the institutional and legal method - the analysis of the French legal regulations, literature and existing studies in the area of French operational urban planning, and in particular the selected planning tool-Zone d'Amenagement Concerte.

Findings: The study reveals that France has an extensive set of tools, designed to support the development of the urbanized territory and protect spatial order. The research shows that there is no reason why similar operational tools could not be introduced in Poland.

Originality/value: The operational planning instrument-Zone d'Amenagement Concerte - may have a wider positive impact in Polish urban planning reality and could become a catalyst of positive changes helping to counteract dangerous and expensive processes that destroy Polish space, such as urban sprawl.

Keywords: operational urban planning, urban design.

Category of the paper: Research paper.

1. Introduction

Operational urban planning can be defined as the ability to effectively implement visions, investments, plans and concepts regarding the creation of space. Expressed more simply - it is the art of building cities, not just planning them (Ossowicz, 2019, p. 8).

Particular attention of this article will be given to a selected instrument of operational urban planning which has French origin - Coordinated Development Zone_orig. Zone d'Amenagement Concerte_ZAC. The study of this instrument will be preceded by an introduction about the principles of this type of urban planning and the system of tools among which the ZAC operates.

2. Operational urban planning

French Urban Planning Code_orig. Code de l'urbanisme in Art. L311-1 defines Zone d'Amenagement Concerte_ZAC as a zone where public authority_orig. une collectivité publique or competent public institution_orig. un établissement public decides to intervene in order to perform or have performed the operation of spatial development and providing utility infrastructure of an area, in particular the area which this authority or this institution has acquired or will acquire with a perspective of subsequent sale or transfer to public or private operators.

Synergy is the striving of contemporary European urban planning in development processes. To achieve the comprehensive goals of these processes in many countries, the so-called active urban planning is practised. Active urban planning is the opposite of passive urban planning, i.e. a traditional planning approach based solely on normative and limiting tools such as local spatial development plans.

The traditional approach, based on legal regulations in the form of spatial development plans, formulates a vision of the development of territories by dividing this territory into zones with predetermined function and ensures the implementation of this vision by establishing rigid legal regulations and specific planning standards. These plans are accused of slowing down the dynamics of socio-economic development, limited possibilities of forming a coherent urban fabric, as well as limiting the ability to develop solutions to the problems of contemporary space. This is the so-called passive spatial policy, which in the context of the problems of contemporary space turns out to be insufficient to steer the investment dynamics in a way that would allow to draw up proposals aimed at solving these problems. 'Spatial policy, which is dominated by the application of free development initiation, can be called 'passive', as in a project of this type, the authorities to a large extent give the initiative to investors, including developers. Its core is allocating land for development purposes and waiting for the interest and response of entities that intend to build something. Municipal authorities only take action on their part when they are sure that new buildings will actually be built' (Ossowicz, 2019, p. 58).

Operational urban planning is an alternative to the traditional approach. According to its assumptions, the process of spatial development of territories, whose basic tool is a rigid legal regulation, should be complemented with operational tools and tactics. Legal regulation, despite the fact that its purpose is to prevent spatial chaos, de facto inhibits the processes of shaping and developing space. Operational urban planning fills these gaps, proposing complementation of the planning toolkit with other elements. These new tools and forms of intervention do not negate the importance of plans or do not eliminate them from the system - instead, they are an operational complement to legal regulation, stimulating development processes slowed down by the static operation of plans. The organization of shaping space and development

within the framework of operational urban planning consists therefore not only in regulating the development of this space, but also in formulating incentives that stimulate social, economic and cultural development.

Active urban planning is characterized by energizing, dynamic, even creative, very active and resilient role of public investments stimulating spatial, economic and cultural development, and consequently flowing therefrom dynamism in the sphere of private investments. However, it may also consist in independent intervention of public entities. It is based on the activation and strong dynamics of cooperation and collaboration between the public and private sectors (Chwalibóg, 2018, pp. 55-61). Spatial policy is a special domain of intervention by public authorities. As part of the spatial policy, a given territory is managed, its spatial development is transformed or maintained and its development is controlled, but these activities must be undertaken on purpose.

Spatial planning as a management instrument affecting land use and development and as an expression of spatial policy conducted by a representative social authority (local government, national government) today faces specific challenges resulting from the complex context and intensive transformations of the reality in which it operates. This complexity and multi-layer manifest themselves in political, social, economic and many other aspects. The degree of multidimensionality of the context translates into a growing scale of challenges in the area of spatial planning and urban design. As a consequence of the abovementioned, planning and design processes are becoming more and more interdisciplinary, characterized by thematic and subjective diversity.

Changes in spatial development are currently taking place through many different activities undertaken by many different entities. This multiplicity of issues and partners participating in the life of the territory means that public institutions conducting spatial policy cannot, in fact, independently lead to changes in its management and development. Spatial policy, however, plays a special role in this field, because although the implementation and carrying out of transformations in spatial development are achieved with the participation of both public entities and non-public partners (social, market or professional), public authorities are equipped with the strongest tools enabling the most comprehensive impact in this area. In these diverse conditions, spatial and urban planning, whose basic, most traditional and still the most frequently used instruments were and still are local spatial development plans, today requires complementing the toolkit with much more flexible and comprehensive tools and methods, going beyond the rigid framework of statutory regulations and preparation the spatial development plans. The task of spatial policy today is to develop and to use the spectrum of these tools.

Operational urban planning has a strategic meaning - it gives public institutions involved in conducting spatial policy the choice and possibility of using a variety of tools from the wide spectrum of methods or tactics. This freedom of choice given is intended primarily for the purpose of stimulating and supporting cooperation with various forces and partners shaping

space and participating in spatial development. It also helps to take control over the whole development process and can lead to undertaking and carrying out desired urban activities by various partners from different fields of activity.

The subject matter of operational urbanism is a very extensive area, therefore, due to the scope and purpose of this paper, the theory of operational urbanism will be delivered in a sketchy manner. A more in-depth discussion of specific issues would be pointless, as it would duplicate the content contained in the already existing and cited by the author literature on the subject.

Urban projects implemented via operational urban planning are aimed at both creating new urban tissue and revitalizing existing degraded areas requiring intervention. Active urban planning is carried out in the mode of an urban operational project, which is the basic operational instrument in European urban planning. This project is based on the following framework: financing - consolidation - reparcellation - program - plan - project - implementation - distribution of profits, and it is carried out by using coordinated tools, including legal, financial and administrative means. The synchronized, multi-stage model of actions outlined above (ie: financing - purchase of land - consolidation - reparcellation - program - plan - project - implementation - distribution of profits in the system of public-private partnership) can function properly in conditions of good, efficient, synchronized cooperation and management (Chwalibóg, 2018, p. 61).

The main advantages of operational urban planning are:

- the possibilities it offers in terms of mastering the order in space, setting a path for the protection of spatial order,
- the function of a stimulus boosting the development processes of the urban organism at all levels: social, economic, aesthetic, cultural and others,
- opening to the possibility of constructing a coherent, multifunctional urban tissue within its framework and using its instruments,
- the possibility of including local social voices in the project discussion at the programming and planning stage - this implies the development of local identity and building a dialogue with the local community. efficiency, productivity result in the acceleration of investment execution, which in turn is attractive to local groups and builds a sense of social and territorial identity,
- due to its functionally and spatially coordinated structure, operations carried out in the described scheme promise high efficiency, and thus become a magnet for investors (Chwalibóg, 2018, pp. 55-61).

3. French regulation of the concept of operational urban planning

The principles of operational urbanism developed intensely in France. In view of the French Code d'Urbanisme, the concept of operational urban planning encompasses many procedures undertaken to implement the spatial planning process. The French legislator provided the regulation of the active form of urban intervention in Article L300 - 1 Code d'Urbanisme. This provision clarifies the concept of operational urban planning. Code d'Urbanisme, Livre III Aménagement foncier, Article L - 300 - 1 in paragraph 1 says that: 'The purpose of investment activities or investment projects is the implementation of an urban project, local housing policy, organization of transformations, management, expansion of the existing or creation of new business premises, promoting the development of leisure and tourism, creation of public utility facilities or facilities for research or higher education, fight against homelessness and inadequate or unsafe housing conditions, enabling urban renewal, preserving or upgrading the heritage of built or intangible areas and natural areas, in particular by striving for optimal use of urban areas and future urban areas' (Code de l'urbanisme..., 2022)

In paragraph 2 of the same article we read: 'Planning, as defined in this book, refers to all activities of local governments or public inter-municipal cooperation organizations which, within their competence, aim at, on the one hand, carrying out or authorizing activities or the operations referred to in the preceding paragraph and, on the other hand, ensuring the coordination of those activities or operations' (Code de l'urbanisme..., 2022). This regulation functions alongside the regulation of traditional planning methods and tools.

4. Zone d'Aménagement Concerté_ZAC

From the post-war period to the 1960s, France functioned as a planning system based on spatial development plans that divided land and assigned specific uses to particular areas, and consequently built a map of future development, setting future development processes with relatively clear and rigid boundaries. The planning tools constructed in this way essentially had a purely regulatory function, and this was also the nature of French planning policy at the time. A key modification of this planning regime was introduced by the regulation called Loi d'orientation foncière_LOF of 30 December 1967 (Land Guidelines Act No. 67 - 1253). Under it, a two-stage system of plans was created based on Schéma directeur d'aménagement et d'urbanisme_SDAU, i.e. the predecessor of Schéma de cohérence territoriale_SCoT, and on Plan d'occupation des sols_POS, i.e. the predecessor of Plan Local d'Urbanisme_PLU. SDAU is a master plan, i.e. a general plan, while POS is a local plan. Master plans for individual agglomerations were prepared in order to forecast the development of the latter. These forecasts

were based on research on employment models, demographic analyses, infrastructure analyses, etc. contained therein, and were to serve to formulate development goals and tasks, while local plans were to be an implementation tool at the local level. As a complement to this system, the above mentioned French act introduced the accompanying planning tool called Zone d'aménagement concerté_ZAC which means Coordinated Development Zone. ZAC is a very widespread instrument of French operational urban planning. In many French cities and agglomerations, several projects are implemented in this mode. Loi d'orientation foncière_LOF, by introducing ZAC, decided to extend the current, only regulatory and controlling way of thinking about space and opened up opportunities for the use of active strategies seeking the most appropriate use of areas and the most appropriate program and planning response for them in the context of not only the subject area, but in the context of neighboring areas, and even in the context of the entire city. Therefore, this act is considered as the foundation of active operational urban planning.

The advantage of the ZAC zone is the possibility of creating coherent, multifunctional development programs and implementing investments such as holistic, comprehensive urban complexes. Such projects are an important alternative solution to the problem of urban sprawl. In the ZAC mode, they are created on the basis of a coordinated, comprehensive plan and implementation projects of individual parts, such as housing, services, workplaces, infrastructure, greenery and recreation, and other possible ones. The initiator of such projects is the commune. They can be created in a public-private partnership formula. In addition, ZAC performs other important functions - it works as a catalyst for the development processes of the entire urban complex, and moreover, it is an area of experimentation and observation for social housing programs. The assumptions of these programs cover issues such as the percentage of social housing in the hybrid structure of the estate, the introduction of local health care systems or the development of neighbourly relations among its residents (Chwalibóg, 2018, pp. 59-60).

5. The essence of the instrument

As it was already mentioned at the beginning of this paper, ZAC is regulated in the French Code de l'urbanisme. Article L311-1 of the Code explains its essence as a zone where public authority_orig. une collectivité publique or competent public institution_orig. un établissement public decides to intervene in order to perform or have performed the operation of spatial development and providing utility infrastructure of an area, in particular the area which this authority or this institution has acquired or will acquire with a perspective of subsequent sale or transfer to public or private operators (Code de l'urbanisme..., 2022).

Two important aspects of the ZAC are worth noting. The initiative to carry out the operation lies essentially with the public entity. This is a feature that distinguishes ZAC from another operational urban planning instrument called *lotissement*. *Lotissement*, i.e. *parcelling*, is usually implemented on private initiative. It is therefore a public development operation, even if its implementation is entrusted to a private entity.

Another characteristic feature that distinguishes ZAC from other active urban planning mechanisms is the scope of control over the process of planning and development of the area, which remains with the entities initiating a given operation. In the case of ZAC, the entity performing the operation exercises this control continuously and to the full extent at every stage of the operation (*Guide de l'aménagement urbain...*).

Signum temporis of today's urban planning is the need for close cooperation between public and private capital. Urban planning of the 21st century is a mechanism that requires public operators to face the marketing requirements of the free market reality. ZAC is the tool that is supposed to mobilize and foster cooperation between public and private entities, and thus public and private capital, for the purpose of optimal development of the urban environment and urban fabric. ZAC is a functional structure based on a general, approved plan. On the basis of this plan, the public and private parties are making arrangements on land consolidation and infrastructure investments, aimed at the development and future land use (Chwalibóg, 2018, pp. 55-61).

The subject of ZAC is a new, multi-functional complex designed and created on the basis of a holistic, coordinated plan - a vision of the entire complex, within which, in turn, investments of various types are created on the basis of partial projects - housing, service, public use, infrastructural, recreational, etc. (Chwalibóg, 2018, p. 59).

The ZAC formula allows to perform this operation on the territory of one or more municipalities_orig. ZAC intercommunales or in several locations_orig. ZAC 'multi-sites'. Such institutional linkage creates the conditions for the selection of the area where the development operation should be carried out and for making this zone an attractive, future-oriented development area where solving the problems of the agglomeration is carried out using modern, updated planning processes, and thus contributes to improving the quality of these processes and allows this planning initiative to keep up with the complex processes of change in cities (*Guide de l'aménagement urbain...*).

ZAC creates the possibility of programming multifunctional investments in the zone in question. ZAC is also an instrument created for the implementation of large-scale urban projects, because in the situation of the dynamically changing needs of urban planning discipline and the free market requirements, as well as new local government conditions in French agglomerations, it is precisely large-scale urban projects that become the fundamental way of adapting large areas in downtown zones to a functionally complex building tissue composed in a sophisticated manner (residential, service, commercial, recreational, etc...) (Tölle, 2009, p. 57).

Currently, the spectrum of applications also includes smaller-scale projects, which translates positively into the possibility of their financing by the private sector (Larsson, 2006, p. 153).

ZAC effectively complements planning instruments in the free market conditions. The essence of ZAC is to enrich the market game by supplementing its forces or counteracting them. Public entities (e.g. local governments), public institutions that may act in the development formula under ZAC, participate in the processes and adequately complement and counteract the forces of the free market. What is very important - ZAC allows them to maintain control over the land and its development and to protect this land. ZAC allows for such programming and shaping the future function and facilities that it becomes an impulse for cultural, social, economic and other kinds development. It is a creative, stimulating and modern method, because it gives the opportunity to meet the requirements of the present - free market and democratic society (to meet and not succumb to market ruthlessness). Its purpose is to protect urban fabric and space. In addition, it allows to manage the investment dynamics, allows to organize the processes of creating the urban tissue in such a way that this tissue, being a coherent, multifunctional and healthy organism, stimulates and dynamizes further development processes on many levels - social, cultural, economic and planning. ZAC is a creative mechanism, boosts investment dynamics, allows for creating urban fabric, which in turn gives the synergy effect (in contrast to the local zoning plan), because it does not exclude the potential benefits of cooperation.

ZAC was introduced by the Loi d'orientation foncière_LOF Act in 1967 as a special operational instrument constituting a derogation from the general principle of compliance of urban and planning projects with local planning documents - ZAC by law did not have to be compliant with PLU, i.e. de facto it was a tool of derogation. A modification of this regulation was introduced by the 1976 Act in form of the requirement of coherence of urban development and planning. From then on, the ZAC had to be consistent with Le Schéma Directeur d'Aménagement Urbain_SDAU, i.e. with the then development strategy at the supra-local level and located in urbanized zones or zones of future urbanization of the local development plan Le plan d'occupation des sols_POS, i.e. the then local spatial development plan - the predecessor of PLU. Moreover, under the Act of 1976, in municipalities with POS, it could only be provided for in urbanized zones or future urbanization Le plan d'occupation des sols_POS. The location of the ZAC within the area of POS did not mean, however, an absolute requirement to subordinate the ZAC to the requirements of the POS - the French legislator provided that urban planning documents called Le Plan d'Aménagement de Zone_PAZ, i.e. zone development plans, may be prepared for the ZAC. PAZ was a tool prepared to regulate the conditions of land development in a situation where the POS regulation was inadequate to the intention provided for in the ZAC or in the absence of a POS. In this sense, the PAZ was optional, because if the POS functioned and enabled ZAC operations, the documentation of its creation could provide for the POS regulation as binding (Bervas, Lemée, 2004, pp. 19-23).

The possibility of regulating newly established ZACs by PAZs was removed from the legal system along with the tool itself by the Act *La loi relative à la solidarité et au renouvellement urbains*_SRU of 13 December 2000. This SRU Act is an expression of the national authorities' understanding of the need to turn towards sustainable, coherent and inclusive urban development and renewal (*Loi Solidarité et Renouvellement Urbains...*). With the simultaneous introduction of the requirement of compliance of the ZAC with the PLU, it was to limit the deregulatory aspect of the ZAC while maintaining its flexible strategic and operational essence (Bervas, Lemée, 2004, p. 19).

Currently, ZACs must be integrated with the provisions of the existing local spatial plans *Le plan local d'urbanisme*_PLU in order to permanently get rid of the concept that ZACs can be urbanized as an exception to the general requirement that urban projects comply with local planning documents. This procedure was introduced in order to optimize the coherent development of the areas and to increase the cohesion and quality of the urban fabric and to embed the newly designed zone in the existing urban context. With regard to today's PLUs, there is also no longer a requirement to locate them in urbanized areas or areas of future PLU urbanization. Therefore, they can be located not only in construction areas, but also in any PLU areas. Although today's ZACs must comply with the provisions of the PLU and be covered by the PLU, in certain situations, if there is such a justified need, the PLU may be modified to include the project within its regulations (*Guide de l'aménagement urbain...*).

Examples of operational French urban planning using ZAC confirm the effectiveness of this multifunctional tool complementing the spectrum of urban policy instruments. ZAC responds to the challenges and needs of a modern city, e.g. through its value and usefulness in the conditions of the free market - by responding to its requirements, it can also be a barrier to its often destructive and threatening spatial order.

References

1. Bervas, E., Lemée, G. (2004). L'évolution du régime des zones d'aménagement concerté. *Gazette du Palais*, No. 300, pp. 19-32.
2. Chwalibóg, K. (2018). Urbanistyka aktywna pobudzająca rozwój społeczny i gospodarczy. In: K. Chwalibóg (Ed.), *Polska Polityka Architektoniczna* (pp. 55-61). Warszawa: Narodowe Centrum Kultury.
3. *Code de l'urbanisme* (2022), <https://www.legifrance.gouv.fr/codes/id/LEGIARTI000006815155/>.
4. *Guide de l'aménagement urbain*. Retrieved from: http://fpifrance.fr/sites/default/files/PDF/fpi-guide_de_lamenagement_urbain.pdf?fbclid=IwAR3QN05PwoU7yi2ah7QuPuOrApeauh0pnATYCuixjb66DMr6Xh0CQWQevE, 1.07.2020.

5. Larsson, G. (2006). *Spatial Planning Systems in Western Europe. An Overview*. Amsterdam-Berlin-Oxford-Tokyo-Washington, DC: IOS Press.
6. *Loi Solidarité et Renouvellement Urbains Des nouveaux outils pour les collectivités locales*. Retrieved from: http://www.pyrenees-orientales.gouv.fr/content/download/5908/33373/file/01-plaquette_SRU.pdf, 28.04.2020.
7. Ossowicz, T. (2019). *Urbanistyka operacyjna. Zarys teorii*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej.
8. Tölle, A. (2009). Przejście od ekstensywnego do intensywnego rozwoju obszaru aglomeracyjnego na przykładzie Wielkiego Lyonu. In: J. Parysek (Ed.), *Wybrane problemy miast i aglomeracji miejskich na początku XXI wieku* (pp. 47-62). Poznań: Instytut Geografii Społeczno-Ekonomicznej i Gospodarki Przestrzennej Uniwersytetu im. A. Mickiewicza.

THE USE OF CHATBOTS AND VOICEBOTS BY PUBLIC INSTITUTIONS IN THE COMMUNICATION PROCESS WITH CLIENTS

Tomasz NOGA

University of Lodz, Faculty of Management; tomasz.noga@uni.lodz.pl, ORCID: 0000-0003-3732-8782

Purpose: The purpose of this publication is to identify the opportunities and threats arising from the use of chatbots and voicebots in Polish public sector institutions.

Design/methodology/approach: The theoretical basis presented in this paper is the available literature on the subject. Expert research was conducted with practitioners and theoreticians from the Lodz Province about chatbots, voicebots and public institutions. The research technique was a standardized interview.

Findings: The results of the research made it possible to identify the opportunities, limitations and risks of implementing chatbots and voicebots in a public institution.

Research limitations/implications: The survey conducted with experts indicates the problem and the need for change and identifies a way forward for digitization in public institutions.

Practical implications: The results of the expert research can provide a path to the successful digitization of many public institutions and consequently provide inspiration and savings when designing bots that serve clients.

Social implications: The quality of customer service of public institutions is a problem identified in this article. By implementing the suggestions resulting from the research, client service can be improved or completely reorganized.

Originality/value: The article highlights the possibility of transferring artificial intelligence tools, i.e. chatbots and voicebots, to public institutions, also pointing out the possibilities of solutions and their limitations and risks of implementation. For the purpose of the paper, expert practitioners and theoreticians were invited to express their opinions.

Keywords: chatbot, voicebot, artificial intelligence, bots.

Category of paper: Research paper.

1. Introduction

The 2020s have seen rapid and substantial advancements in artificial intelligence (AI). AI-based solutions have an increasingly important role in business, as more and more companies discover the benefits of using AI tools (PARP, 2022). Already in 2017, the value of

the global artificial intelligence market exceeded \$16 billion, and analysts from the research company MarketsandMarkets have predicted that by 2025 the value will grow to more than \$190 billion at a factored average annual growth rate of 36.6% (Szewczyk, 2019). An updated 2022 forecast anticipates that the AI market will grow to \$86.9 billion in 2022, and with an average annual growth rate of 36.2% will reach \$407 billion by 2027 (MarketsandMarkets, 2022). A forecast also made in 2022 by Fortune Business Insights paints a different picture: it estimates that the market will be worth \$387.45 billion in 2022 and \$1394.30 billion in 2029, with an average annual growth rate of 20.1% (Globe Newswire, 2022). These figures indicate strong growth in the artificial intelligence market.

In 2019, it was predicted that artificial intelligence would have an impact on humanity comparable to the spread of electricity and that it would change the face of how all industries and the job market operate (Infuture Institute). Three years on, vehicles backed by artificial intelligence tools have become the norm, mobile apps prompt us with shopping lists based on our tastes and habits, virtual assistants help us manage our households, and businesses increase revenues while reducing costs. Artificial intelligence, however, is not only about automating processes, but also about generating innovative products and services, creating new revenue streams and better meeting buyers' needs (McKinsey, 2017).

The purpose of the publication is to identify opportunities and threats associated with the use of artificial intelligence-enhanced tools in Polish public sector institutions, i.e. chatbots and voicebots, which are a technology increasingly used by enterprises thanks to its ease of implementation and reduction of organizational costs.

2. Chatbots and voicebots – a review

We are living in a time of intense digital transformation, which has altered the ways we communicate. The traditional human-to-human (H2H) communication model has become the foundation for human-to-machine (H2M), machine-to-human (M2H), and machine-to-machine (M2M) communication models (Gwiaździnski, 2019, p. 93). As a result, voice assistants such as Alexa and Siri are used to support our computers, smartphones and other electronic devices, while AI-supported marketing tools known as chatbots and voicebots can be used by businesses and public institutions to facilitate communication. These solutions have an important role in the human-to-machine interaction process (Kaczorowska-Spychalska, 2019, p. 268).

Artificial intelligence is a symbol of the Fourth Industrial Revolution (Industry 4.0), which is an advanced digital transformation of chains whose horizontal and vertical interconnections of units and composite devices permeate each other. Key components in this area are smart factories, cyber-physical systems (linking the physical and virtual worlds via sensors and actuators), the Internet of Services and the Internet of Things (Siuta-Tokarska, 2021, p. 12).

Although the term artificial intelligence is often used interchangeably with the terms robotization and automation, or is confused with machine learning and the application of algorithms, it is actually a branch of information technology (Jarek, Mazurek, Hałas-Dej, 2018, p. 193). The Oxford Dictionary defines AI as "the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages" (Oxford Reference). However, this description does not specify the complexity of the issue, as defined by Dave Gershgorn: "Artificial intelligence is software, or a computer program, with a mechanism to learn. It then uses that knowledge to make a decision in a new situation, as humans do. The researchers building this software try to write code that can read images, text, video, or audio, and learn something from it. Once a machine has learned, that knowledge can be put to use elsewhere" (Gershgorn, 2017). Artificial intelligence is divided into two categories according to its application. Narrow AI (ANI - Artificial Narrow Intelligence) performs its tasks in a predefined area, while General AI (AGI - Artificial General Intelligence) has intellectual capabilities comparable to the human brain (Jarek, Mazurek, Hałas-Dej, 2018, p. 193). In other words, Narrow AI performs a specific task based on specific rules (e.g. Alexa, developed by Amazon), while General AI is geared to perform any task of which a human is capable (McKinsey, 2017). As of today, it has not been reported that an AGI exists; nevertheless, such a creation would be a machine capable of understanding any human and the world with an improved ability to learn and act (Chaber, Skowrońska, Zakrzewski, 2019).

Artificial intelligence is based on five key areas: voice, text and image recognition, decision-making, and autonomous robots and vehicles (Jarek, Mazurek, 2019, pp. 49-51). Voice recognition technology processes a voice sample and provides expected solutions. Text recognition technology analyzes a source text and provides a result based on it. Image recognition technology analyzes an image and compares it with the materials available to it and consequently delivers the desired result. Decision-making technology brings together technologies that present available solutions based on the information provided. Autonomous vehicles and robots perform predefined tasks autonomously (Jarek, Mazurek, Hałas-Dej, 2018, pp. 194-195).

The use of intelligent robots to automate processes in organizations (Robotic Process Automation) has been a trend of the past few years, and it is a dynamically growing technological area (CCNews.co.uk, 2021). RPA uses a predetermined algorithm to imitate human behavior, thus avoiding the need for human involvement in routine tasks. The goal of RPA tools is to streamline such mundane processes using applications that are not subject to fatigue (Kaczmarek, 2020, pp. 44-45). RPA tools using NextTech (next-generation) technologies mimic not only human behavior, but also competencies. Implementing these solutions into marketing has allowed the creation of a new generation of marketing technologies called MarTech, which is based on marketing automation using artificial intelligence informed by marketing strategies. These technologies are designed to increase the efficiency of planned

activities (Panasiuk, 2022). Many organizations still do not use the above solutions, so the potential for reducing costs associated with contact center staff or administrative staff is large (CCNews.co.uk, 2021).

The application of some of the above technologies is exemplified by chatbots and voicebots. The task of a chatbot is to mimic humans while having an interactive conversation with any caller, to support social media communication and relieve the burden on customer service center employees. The tool is an application (algorithm) that communicates in the form of a dialogue. Used to contact people, it employs technology to interpret and then respond to user queries (Szymanski, Józwiak, 2018, p. 78). However, simulating human behavior in customer interactions is not the best solution in every case. Younger audiences, who soon realize they are talking to a bot, force the bot to quickly solve their problem and provide the right answers. However, the speed and accuracy of the response is influenced by the size of the information resources the chatbot has access to (Szymanski, Józwiak, 2018, p. 80).

Chatbots are used in many industries and uses range from providing information on first aid, acting as the initial point of contact in cases of psychiatric consultation, to training employees (Szymański, Józwiak, 2018, p. 80). A chatbot is a conversational interface with a specific knowledge base, and can therefore also perform a consultation function in administration, such as receiving and processing requests from users seeking information (Filipczyk, 2018, p. 64). Because of its ability to automatically record data acquired during a conversation (Dahyia, 2017, p. 160), a chatbot is also a useful tool in the sales funnel.

Research in Poland has shown that users are generally positive about the help they have received from chatbots, but are aware that these tools are not advanced enough to solve complex queries (Schneider, Nawrocki, 2022). By using a chatbot, both the organization and the consumer receive a benefit. The former saves money, as it does not need to hire multiple people to handle simple inquiries; moreover, the bot is capable of responding to multiple people at the same time, at any given moment. Customers, on the other hand, will appreciate the immediate response and time-saving benefits afforded by this solution (Szymański, Józwiak, 2018, p. 78). Chatbots are frequently used by global businesses, as evidenced by the value of the global chatbot market at \$525.7 million in 2021 with an interim growth rate of 25.7%. It is estimated that this value will grow to \$3.99 billion by 2030 (Grand View Research, 2022).

A voicebot is not much different from a chatbot. It too works on the basis of an artificial intelligence algorithm by recognizing voice input and processing it. Virtual assistants can call customers and inform them about the current status of payments or remind them to pay (Chaber, Skowroński, Zakrzewski, 2019). In medical institutions, voicebots communicate with recipients by providing information, booking appointments or giving reminders (Bartusek, Kulawik, 2021, p. 126). Modern solutions in voicebots can help a doctor, for example, to analyze diagnostic images and, consequently, make a diagnosis (Pochrzęst-Motyczenska, 2019). A bot can talk to a user for many minutes, gradually obtaining the necessary information from the user (the collected data can be saved in the system) to be used by a salesman, for example

or to conclude the interaction without recourse to another employer. Additionally, a voicebot's artificially generated voice can be adjusted if necessary. Modern algorithms can address the user by name and, after analyzing previous interactions, select the tone and form of the conversation to optimize the customer's experience during a phone call (CCNews.co.uk, 2021). Bots can reduce companies' customer service costs by up to 30%, but are required to be tailored to the needs of a specific user (Schneider, Nawrocki, 2022).

The "Polski Ład" (the so-called Polish Deal) proposes a plan that will allow all official matters to be carried out online without the need to pay stamp duty from 2024 (Schneider, Nawrocki, 2022). To achieve this, it may be necessary to prepare virtual assistants with advanced artificial intelligence technologies which will be the first line of support in public sector institutions. Various efforts have already been made to use bots in public administration in Poland, with some of the first bots, introduced by the Ministry of Development and the Prime Minister's Office, answering questions about coronavirus (Dębowska et al., 2020). Bots have also been implemented at the local government level, for example by the City of Wrocław (Jurczak, 2020). Following the outbreak of the COVID-19 pandemic, bots were also adopted by the WHO, illustrating the global use of this technology by public institutions.. Among other things, the bot answered basic questions about the course of the disease (Miner, Laranjo, Kocaballi, 2020, pp. 1-2).

3. Empirical research

For the purpose of the article, an expert survey was conducted, in which a standardized interview technique was used to collect data. The survey involved five experts from the Lodz Province who have knowledge and experience of the subject matter, either as specialists providing academic input in determining the scope of the study, or those familiar with it in their daily professional work. Representing the University of Lodz, the Lodz Provincial Office and the Regional Chamber of Legal Advisors, the respondents were selected on the basis of their familiarity with the use of artificial intelligence, including text and voice assistants, and/or their working knowledge of the functioning of public benefit institutions, including customer service.

Personalized emails were sent to the experts in October 2022, along with standardized open questions on the use of chatbots and voicebots by public policy institutions. The questions focused on their knowledge of currently implemented chatbot and voicebot tools and the process of their operation, areas where they could benefit the institution and the client soliciting information and details of these benefits, as well as the risks and limitations of their use from the perspective of the public institution and its clients.

An expert from the Provincial Office in Lodz had not encountered the use of chatbots and voicebots in his professional work, while a respondent from the District Chamber of Legal Advisors noted that voicebots were already being used by courts and prosecutors' offices. He noted, however, that they were primitive: "In several courts, by typing a case reference using a smartphone, one can receive information about the current status of the case or the last event that took place in the case (e.g. the scheduled hearing date). The fact remains, that for the daily work of an attorney, such solutions cannot and do not replace contact with an employee of the court/prosecutor's office, who can check the content of a particular document or furnish information on various informal issues, such as when to expect a ruling in a particular case or on what days the judge has hearings scheduled (which can speed up the recognition of an application, for example)". Experts from the University of Lodz detailed that in city offices, marshal offices, hospitals, health clinics, museums, the Ministry of Development, the Ministry of Entrepreneurship and Technology, or the WHO, such solutions, although often primitive, do exist. One of the above experts noted the regular and natural crossover of these digital solutions from the business sector to public administration.

An expert from the Provincial Office in Lodz pointed out that chatbots and voicebots could provide an alternative to office consultants, thus reducing their workload. The respondent from the Chamber of Legal Advisors noted that these tools could provide basic information (e.g. details of the status of a case) or enable the automatic transmission of information to those responsible for a case. In addition, virtual assistants could provide information about a clerk's absence (including his/her scheduled return), the date of receipt of correspondence, deadlines, fees and instructions related to the proceedings, which would eliminate the need to search for this data on multiple websites. Experts from the University of Lodz disagreed on the above process of chatbots and voicebots. One said that their actions should be limited to "speech recognition, identifying a user's problem and connecting them to the appropriate person." Another expert believes that voicebots and chatbots could solve a problem on their own, without being connected to a consultant, but in the absence of such an option, they could be directed to the person dealing with the issue: "If it was the Social Security Institution, then the chatbot could connect to the system, e.g. PUE (a digital service platform), and in the event that it was not able to help, it could offer, for example, to arrange an appointment at the facility". In addition, it was noted that should these solutions be invested in and implemented, they should be technologically and intuitively standardized in such a way as to make it easier for users to resolve issues.

The experts identified areas in which chatbot and voicebot tools would be useful from the perspective of public institutions and stakeholders, with some dividing their use into external and internal communications. The former would relieve the workload of officials by reducing duties related to handling users' queries. Quickly verifiable questions could be answered, for example those referring to "opening hours, ticket prices, explanations of procedures, e.g. for applying for funding, assistance in finding certain forms or helping to fill them out,

support for tourists, crisis alerts with information updated in real-time, e.g. in the case of flooding, which streets are flooded, current safe evacuation routes." As a result, they could devote more attention to any remaining substantive conversations. One expert pointed out that virtual assistants could resolve issues that do not require processing sensitive data. In the case of internal communication, these solutions would facilitate contact within institutions or between branches of the same institutions.

By using chatbots and voicebots, respect and trust in officials could increase, as they would only answer questions that require a human presence. This would free up time to carry out statutory tasks, which demand accuracy, and the internal communication process would be shortened allowing more efficient work. In addition, there could be a reduction in number of users who become frustrated with officials, for example when an inquiry takes a long time to process. According to the experts interviewed, the quality and speed of services provided would be improved, resulting in cost reductions for institutions. Virtual assistants would also be of benefit to inquirers, reducing call waiting times and providing new digital convenience.

In addition to opportunities, the implementation of the tools in question also presents limitations and risks. From the perspective of the institution's human resources, these technologies could compete with those employed in institutions, as the software might replace multiple full-time positions. In addition, these solutions could result in the exclusion of a social group that does not want, does not understand, or is unable to use modern digital technologies. There is also uncertainty among the experts about the protection of inquirers' personal data, including verification by the bot, and subsequently the security of personal data, which could be subject to theft through a cyber-attack. Some of the experts note the technological limitations of communicating with a virtual assistant, such as the problem of asking complex questions or nesting multiple questions within a conversation. Mistakenness stemming from a misunderstanding of the subject matter on some issues could result in factual misrepresentation, which could then be liable to legal action and potential damages. Experts also pointed to the problem of the intuitiveness of the software and the need to constantly update it, both legally and in relation to its specific activities, including data. The respondents also mentioned the issue of implementing such services and in the case of public institutions, public procurement, which can impede the selection of the best available solution, and, after its implementation, its subsequent updating in the long term. One expert concluded that the technologies in question should be available in addition to, rather than instead of, traditional communication methods.

4. Conclusions

Artificial intelligence, is one of the hallmarks of human progress in the 21st century, and is a key element in cutting-edge digitization. AI-based solutions generate a wealth of benefits for organizations and their customers. Virtual assistants such as chatbots and voicebots implemented in customer service-related departments offer companies opportunities, but their use also comes with risks. Furthermore, digitization technologies have been adopted by Polish public administration institutions, where the first chatbots and voicebots have been implemented.

The experts in the author's study noted that though often primitive, the first chatbot and voicebot solutions are available in courts and prosecutors' offices, but their operation is limited to typing in specific data to receive the expected response. Virtual assistants are also found in public institutions such as city and marshal offices, hospitals, clinics, museums, as well as on the Ministry of Development and Ministry of Entrepreneurship and Technology hotlines. The operation of chatbots and voicebots would provide an alternative to front office staff in institutions. These solutions could provide basic information to answer routine inquiries. Other experts said that virtual assistants should redirect calls to a competent person or resolve the issue using an algorithm. It was noted that these solutions should be standardized across all institutions.

Virtual assistants would provide an opportunity to facilitate both internal and external communication between institutions. In the case of the former, they would shorten the communication process between departments, for example. Bots' support of external communication would reduce employees' workloads, allowing them to work on statutory tasks. Respect for and trust in officials could increase, as inquiries would be addressed immediately, and contact with officials would be limited to matters requiring at least initial contact with a human. For this reason, bots could displace many full-time consulting positions. These solutions might not, however, be easily assimilated by a certain segment of society that is unwilling or unable to understand or use such technologies. There are also issues related to protection of personal data (including the threat of cyber-attacks), technological limitations (and consequently the fallibility of the software), the need for constant updates, and the requirement to implement public procurement of these solutions, which could result in the selection of less than ideal technology.

Studies have shown that despite being fraught with manifold technological, legal and social challenges, implementation of the digital solutions in question is needed. The "Polish Deal" law mandates Polish public institutions to implement similar solutions by 2024, so soon it will be possible to observe if virtual assistants are at least as helpful and efficient as human employees.

References

1. Bartusek, M., Kulawik, A. (2021). Analiza potrzeb zastosowania nowoczesnej technologii i sztucznej inteligencji w sektorze ochrony zdrowia. *Fides, Ratio et Patria. Studia Toruńskie, Vol. 15*, p. 126.
2. CCNews.pl (2021). *Voicebot czy chatbot jest też najlepszym pomocnikiem człowieka w komunikacji z klientami*. Retrieved from: <https://ccnews.pl/2021/10/25/voicebot-czy-chatbot-jest-tez-najlepszym-pomocnikiem-czlowieka-w-komunikacji-z-klientami/>, 27.10.2022.
3. Chaber, P., Skowrońska, A., Zakrzewski, R. (2019). *Monitoring trendów w innowacyjności – Raport, 7* (p. 66). Retrieved from: https://www.parp.gov.pl/storage/publications/pdf/RAPORT_NSI_7_2019.pdf, 27.10.2022.
4. Dahiya, M. (2017). A Toll of Conversation: Chatbot. *International Journal of Computer Sciences and Engineering Vol. 5, Iss. 5*, p. 160.
5. Dębowska, K., Kłosiewicz-Górecka, U., Leśniewicz, F., Szymańska, A., Świącicki, I., Ważniewski, P., Zybortowicz, K. (2020). *Nowoczesne technologie w przedsiębiorstwach przed, w trakcie i po pandemii COVID-19*. Warszawa: Wydawnictwo Polskiego Instytutu Ekonomicznego.
6. Filipczyk, B. (2018). Perspektywy zastosowań chatbotów w organizacjach. *Studia ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, Vol. 368*, p. 64.
7. Gershgorn, D. (2017). *The Quartz guide to artificial intelligence: What is it, why is it important, and should we be afraid?* Retrieved from: <https://qz.com/1046350/the-quartz-guide-to-artificial-intelligence-what-is-it-why-is-it-important-and-should-we-be-afraid/>, 27.10.2022.
8. Globe Newswire (2022). *AI Market Size to Reach USD 1394.30 Billion by 2029*. Retrieved from: <https://www.globenewswire.com/en/news-release/2022/09/13/2514767/0/en/AI-Market-Size-to-Rreach-USD-1394-30-Billion-by-2029.html>, 27.10.2022.
9. Grand View Research (2022). *Chatbot Market Size, Share & Trends Analysis Report By End Use (Large Enterprises, Medium Enterprises), By Application, By Type, By Product Landscape, By Vertical, By Region, And Segment Forecasts, 2022-2030*. Retrieved from: <https://www.grandviewresearch.com/industry-analysis/chatbot-market>, 27.10.2022.
10. Gwiaździński, E. (2019). Inteligentny asystent głosowy – szansa dla biznesu. In: A. Piotrowska (Eds.), *Trendy w zarządzaniu przedsiębiorstwem w ujęciu międzynarodowym* (p. 93). Łódź: Wydawnictwo SIZ.
11. Infute Institute, *Przyszłość w erze cyfrowej zmiany*. Retrieved from: <https://infuture.institute/raporty/transformacja-cyfrowa/>, 27.10.2022.

12. Jarek, K., Mazurek, G. (2019). Marketing and Artificial Intelligence. *Central European Business Review*, Vol. 8, No. 2, pp. 49-51, DOI: 10.18267/j.cebr.213.
13. Jarek, K., Mazurek, G., Hałas-Dej, S. (2018). Marketing i sztuczna inteligencja. *Przedsiębiorczość i zarządzanie*, Vol. 19, No. 5, Iss. 2, pp. 193-195.
14. Jurczak, T. (2020). *Voicebot wspomaga infolinię NFZ*. Retrieved from: <https://www.sztucznainteligencja.org.pl/voicebot-wspomaga-infolinie-nfz/>, 27.10.2022.
15. Kaczmarek, M. (2020). Robotic Process Automation, czyli automatyzacja modeli decyzyjnych z wykorzystaniem botów. Perspektywy i obawy na przykładzie zastosowań w branży farmaceutycznej. *Studia i prace. Kolegium Zarządzania i Finansów*. Vol. 179, pp. 44-45, DOI: 10.33119/SIP.2020.179.3.
16. Kaczorowska-Spychalska, D. (2019). How chatbots influence marketing. *Management*, Vol. 23, No. 1, p. 268, DOI: 0.2478/manment-2019-0015.
17. Markets and Markets (2022). *Artificial intelligence market*. Retrieved from: https://www.marketsandmarkets.com/Market-Reports/artificial-intelligence-market-74851580.html?gclid=CjwKCAjw79iaBhAJEiwAPYwoCGitxIEznc4fgGGUgnczPGotoXSm8s_gZbPzvcIwgQNkEzVhvD-pDhoCFf4QAvD_BwE, 27.10.2022.
18. McKinsey (2017). *Rewolucja AI. Jak sztuczna inteligencja zmieni biznes w Polsce*. Retrieved from: https://www.mckinsey.com/pl/~/_/media/McKinsey/Locations/Europe%20and%20Middle%20East/Polska/Raporty/Rewolucja%20AI%20Jak%20sztuczna%20inteligencja%20zmieni%20biznes%20w%20Polsce/Raport-AI_Forbes_PL.pdf, 27.10.2022.
19. Miner, A.S., Laranjo, L., Kocaballi, A.B. (2020), Chatbots in the fight against the COVID-19 pandemic. *npj Digital Medicine*, Vol. 3, No. 65, DOI: 10.1038/s41746-020-0280-0.
20. Oxford Reference, *Artificial intelligence*. Retrieved from: <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095426960>, 27.10.2022.
21. Panasiuk, A. (2022). Inteligentne technologie MarTech jako wsparcie działów marketingu w branży e-commerce a doświadczenia konsumenckie. *Akademia Zarządzania*, 6(3), pp. 149-150, DOI: 10.24427/az-2022-0036.
22. PARP (2022). *Chatboty i voiceboty przyszłością komunikacji? Korzysta z nich coraz więcej firm* (2022). Retrieved from: <https://www.parp.gov.pl/component/content/article/80526:chatboty-i-voiceboty-przyszloscia-komunikacji-korzysta-z-nich-coraz-wiecej-firm>, 27.10.2022.
23. Pochrzęst-Motyczyńska, A. (2019). *Sztuczna inteligencja obsłuży pacjenta w rejestracji szpitala*. Retrieved from: www.prawo.pl/zdrowie/zastosowanie-sztucznej-inteligencji-w-medycynie,493017.html, 27.10.2022.
24. Schneider, A., Nawrocki, J. (2022). *Ranking czatbotów – jak UX inspiruje producentów i zmienia rynek wirtualnych doradców*. Retrieved from: https://marketingprzykawie.pl/artykuly/ranking-czatbotow-jak-ux-inspiruje-producentow-i-zmienia-rynek-wirtualnych-doradcow/?fbclid=IwAR01zK4I02n8d1hvZOZfxY43-Yu_xssBySb_5AKrwVcvvWNs4be2ZpZD6bs, 27.10.2022.

25. Siuta-Tokarska, B. (2021). Przemysł 4.0 i sztuczna inteligencja: szansa czy zagrożenie dla realizacji koncepcji zrównoważonego i trwałego rozwoju? *Nierówności Społeczne a Wzrost Gospodarczy*, Vol. 65, No. 1, p. 12, DOI: 10.15584/nsawg.2021.1.1.
26. Szewczyk, Ł. (2019). *Do 2023 roku polska administracja ma przejść gruntowny proces digitalizacji*. Retrieved from: <https://media2.pl/tech/157765-Do-2023-roku-polska-administracja-ma-przejsc-gruntowny-proces-digitalizacji.html>, 27.10.2022.
27. Szymański, G., Józwiak, P. (2018). Chatbot – modelowanie i aplikacje. *Informatyka ekonomiczna*, Vol. 48, Iss. 2, pp. 78-80, DOI: 10.15611/ie.2018.2.06.

FINANCING INVESTMENTS IN THE REGIONAL STRUCTURE IN THE FACE OF CRISIS PHENOMENA IN POLAND

Benedykt OPAŁKA

SGH Warsaw School of Economics; bopalk@sgh.waw.pl, ORCID: 0000-0002-4544-7557

Purpose: Assessment of changes in the size of investment outlays and territorial diversification of investment activity in the conditions of crisis phenomena, broken down by selected groups of entities forming the national economy in Poland.

Design/methodology/approach: The method of critical analysis of the literature on the subject and the method of comparative analysis in the field of empirical and statistical data in the generic and territorial arrangement according to selected categories of regional and subregional units.

Findings: The financial diversification of the scope of investment activity of groups of entities operating in the national economy was indicated, in detail in terms of the central and local government subsectors. The scale and directions of changes in spatial disproportions of investment potential in regions and subregions in Poland were identified, taking into account changes resulting from the observed crisis phenomena in the period 2010-2021.

Research limitations/implications: The presented research results are limited by the availability of empirical data in detailed territorial systems. Due to the currently observed dynamic changes and economic turbulence, it is advisable to constantly update data and further analyzes in the conditions of ongoing crisis phenomena.

Practical implications: The practical dimension of the analysis refers to possible applications in the preparation of diagnoses and plans for socio-economic development at various levels of public administration competence.

Social implications: The results of the research may provide information for public sector entities supporting the processes of programming public investments in order to achieve socio-economic cohesion, reduce social disparities and improve the living conditions of the population.

Originality/value: The paper contains the results of analyzes on the consequences of crisis phenomena affecting the national economy and the ability of its selected components to undertake investment outlays. The applied territorial approach provides new knowledge that can be used in further detailed scientific research and in the decision-making process regarding the conduct of investment policy at the national and regional level.

Keywords: investments, regional development, economic crisis, public sector.

Category of the paper: Research paper.

1. Introduction

The political transformations in Poland led to focusing on complex political, social and economic processes of an internal nature, as well as those taking place in the external environment of the state. The socio-economic development was influenced by various factors, the sources of which should be sought already in the systemic transformation initiated in 1989 and in the subsequent economic and social transformations, especially after Poland's accession to the European Union (EU). The progressive globalization processes were also significant, as they meant greater openness of the world's states to international cooperation, increasing the rank of human and social capital, and in European conditions they were clearly manifested through the cohesion policy and supporting activities that responded to the needs of local communities and the development aspirations of the regions.

In addition to the introduction of market economy principles, also giving a new dimension to public authorities at various levels was a key element of changes that became the basis for further development in the conditions of coexistence of the public and private sectors in the market economy and cooperation to improve the living conditions of the society. These phenomena were accompanied by the volatility of economic conditions, the causes of which appeared in various areas of the world economy, but through global connections, which covered many countries with a diverse economic situation, they also affected Poland. In crisis situations, it was the public sector that took action to eliminate threats to the stability of specific sectors of the economy, reduce negative social consequences or sustain economic growth.

When attempting to study the course of socio-economic development processes in Poland, it is necessary to assess investment activity broken down into private sector investments and public sector investments implemented in the economy, and taking into account regional or even local differences. The aim of the article is to present the results of research conducted in the field of investment financing in Poland in 2010-2021 in terms of the assessment of changes in the amount of investment outlays and territorial differences in investment activity in the conditions of crisis phenomena, broken down by selected groups of entities forming the national economy.

2. Theoretical approach to investments in the public sector in relation to development processes and crisis phenomena

In the conditions of developing a market economy in Poland, it was necessary to restore the appropriate position of the public sector, including in particular giving a new dimension to institutions and organizations that could function effectively at the local and regional level.

During this period, a new view on development processes was formed, referring to the concept of regional and local development, and its importance was additionally increased by Poland's accession to the EU and joining the concepts of European regionalism (Jarosiński, 2001; Kleer 2006). Poland's participation in the European integration processes can be treated as a development impulse that contributed to the defining the most important development priorities and the definition of plans for their implementation, additionally with their significant support through new financing opportunities for various development projects undertaken in the enterprise sector as well as in the public sector (Laursen, Myers, 2009; Jarosiński, Opalka, 2021).

The role of the public sector is perceived in the context of a significant stimulator of socio-economic development due to the nature of the public functions performed and the tasks assigned to it for the benefit of specific social groups. Without going into detailed considerations on the model of functioning of the public sector in the economies of various countries, a common feature of public sector entities can be considered involvement in many areas of investment activity, which largely affects changes in development conditions in the short and long term (McCartney, 2015). Undertaking research on the financial dimension of public investments, on the one hand, leads to focusing on identifying appropriate sources of financing in order to secure funds for the implementation of these investments, on the other hand, it should concern the role of investment outlays, considered as a development impulse on the scale of the national economy of a given country, or the regional dimensions of a given economy (Ocolisanu et al., 2022).

Own funds collected and spent within the budgets of individual units are usually indicated as the basic source of financing investments by public sector entities (Gubernat-Ulatowski, 2016; Dworakowska, 2015). The study of the budgets of public sector entities can be considered an important instrument for identifying factors shaping investment capacity, due to the direct dependence of budgetary revenue sources on the state of the economy in various territorial terms, as well as previously shaped development processes, often having a regional or even local dimension. Based on previous research, it can be concluded that there was a permanent shortage of budget funds in Poland that could be spent by public sector entities to finance development tasks (Kostecki, 2020; Cenkier, 2016; Opalka, 2020). Based on the analyzes of investment needs and streams of budget funds allocated for investments by the above entities, it can be concluded that the public sector, both at the national and regional level, encounters numerous difficulties in the implementation of statutory own tasks and there is a need to search for complex solutions, which would allow to finance the infrastructure elements necessary for the proper provision of public services (Sawant, 2010; Jarosiński, Opalka, 2015).

Crisis phenomena observed in the global dimension in 2007-2008, the effects of which in the economies of European countries became clearly noticeable in 2009-2010 and subsequent years, were associated with the need to pay attention to complex internal processes and to processes occurring in the external environment countries, especially in the face of ongoing

globalization processes. The aforementioned financial crisis contributed to making significant changes in terms of management conditions and adjusting the scope of supervision and direct involvement of public authorities, mainly at the government level. It should be mentioned that due to very clear disproportions in terms of development factors, some of the expected consequences appeared with varying intensity in individual countries or regions, including the example of Poland showing a rather limited impact of the crisis on the economic situation (Opalka, 2021). However, referring to the period 2010-2021 adopted for this analysis, one can see difficult to predict events, such as the ongoing COVID-19 pandemic and the armed conflict between Russia and Ukraine, which additionally contributed to the instability of the economy of many regions of the world, which affects the level of public income and thus the investment capacity of public sector entities at the level of both the state and local government administration.

Crisis phenomena, regardless of the reasons for their occurrence, always affect the sphere of the public finance sector. The economic downturn may result in a decrease in the volume of sold production, which in turn will lead to a decrease in the value of revenues and, consequently, pre-tax income in enterprises. As a result, there is a phenomenon of decreasing tax liabilities due to income tax and tax on goods and services, which are supplied to the state budget, and there may also be a decrease in the volume of some components of own income of local government units, which in turn leads to a reduction in the volume of investment capital and to growing financial barrier to undertaking new public investments (Kollatz-Ahnen, Roick, 2018).

The deterioration of the economic situation as a result of the occurrence of crisis phenomena may lead to changes in both the income situation of public sector entities and organizational entities, but also to significant changes in the volume and structure of expenditures in this sector (Jarosiński, 2022). The change in the volume of budgetary expenditure may be directly related to the conditions that may arise in the face of unplanned reductions in budgetary revenues, which in turn may affect expenditures that are not fixed. In particular, changes are possible on the side of the amount of investment outlays that would be implemented as part of the budgets of public entities in conditions if crisis phenomena did not occur. As a consequence, the planned investment implementation scenarios are abandoned and there is a need to reduce investment expenditure, which is caused by the impact of unfavorable crisis phenomena and economic downturn (OECD, 2019).

A decrease in budget revenues does not automatically mean a reduction in the volume of investment expenditures. If the implementation of investments already started in a given entity takes place, then it may be necessary to look for additional sources of financing in order to complete such investments on time and achieve the planned quantitative and qualitative effects in the sphere of public services (Quak, 2018). Such a scenario will not apply in a situation where public entities do not have sufficient creditworthiness and cannot incur further liabilities on the financial markets. Due to the specificity of the investment activities of individual public entities, both at the state and local government level, an individualized approach to the assessment of

the socio-economic situation in local and regional terms is appropriate here, due to the fact that crisis phenomena affect with different strength on economic processes taking place in these units.

In the conditions of crisis phenomena, there may also be a significant increase in the base interest rates set by central banks, which in turn will affect the interest rates on loans offered by commercial banks. In such conditions, entities and organizational units of the public sector may find themselves in an additional difficult situation, consisting in the need to incur liabilities generating higher burdens related to the servicing of loans and credits. Such a situation requires, as already mentioned, thorough research and an individualized approach to the issue of financing investments in these entities due to the differences in the income situation and economic potential, as well as the condition of public finances in the state.

Referring to the recent years and the current situation, it should be emphasized that crisis phenomena go beyond the scope of economic planning even in the medium term, because they result from events that are not directly economic in nature, but rather from threats to global security and are caused by factors that are difficult to predict. It then becomes necessary to change the structure of public expenditure, which often leads to a change in the priorities of such expenditure, shifting the main burden to current expenditure. The COVID-19 pandemic clearly proved that in the conditions of the crisis, the public sector was forced to significantly reorient the directions of public intervention to increase current expenditure, not only on health care (Klimczuk, 2021). There are many scenarios of further development of the situation in the conditions of the crisis, one of such scenarios is the continuation of investment spending while increasing the budget deficit and, consequently, public debt. Therefore, the key issue will be to assess to what extent public sector entities have budgetary resources adequate to the increased scope of current tasks and at the same time allowing to maintain investment capacity. Thus, it is worth referring to the current directions and capabilities of public sector entities in terms of undertaking investment activity, which was covered by the study presented in this paper.

3. Methodical approach and results of empirical research

For the purposes of the study, the desk research method in the field of statistical resources, the method of comparative analysis and the method of critical analysis of the literature on the subject were used. A query of the database resources of the Central Statistical Office in Poland was carried out, in particular in the field of the Local Data Bank, Macroeconomic Data Bank and Knowledge Databases - Atlas of Regions, as well as Eurostat and AMECO (Annual macro-economic database of the European Commission's Directorate General for Economic and Financial Affairs) as well as studies and summaries of data made available in the resources of

province self-government authority offices. During the empirical part of the research, extensive statistical material was collected, but due to the adopted concept of research, the time horizon presented in the text was narrowed to the years 2010-2021, and in some thematic scopes even to the years 2018-2021. The use of the above timeframe made it possible to highlight the characteristic changes taking place in the economic environment, and in particular the deterioration of the situation in the public finance sector due to the economic consequences of the crisis. Financial data characterizing the size of investment activity of various entities included in the public sector, as well as investment outlays incurred in the private sector, were analyzed. In the case of local government units at the local level, i.e. municipalities and districts, an aggregated approach was used in the territorial arrangement of subregions according to statistical units at the NUTS 3 level, which made it possible to analyze spatial differences and clearly present the obtained results in the form of choropleth maps.

Taking into account the results of empirical research, it should be noted that investment expenditure in the public sector in Poland were at a fairly high level, while the share of these expenditure in total investment expenditures in the national economy in Poland was gradually decreasing (Table 1). In 2010, the above-mentioned share of public sector investment expenditure was at the level of 43.5%, and a similar situation took place in subsequent years, until 2012. In 2018-2020, the analyzed ratio of the share of public sector investment expenditure was gradually decreasing to 2017, and starting from 2018 the share of these expenses started to increase again. The highest share in the last years of the analyzed period was achieved in 2020.

Table 1.

Capital outlays in the national economy in Poland in 2010-2021 (in PLN billion)

Specification	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Poland total	217.3	243.3	237.6	231.2	250.8	271.8	244.4	257.9	302.7	320.9	309.5	327.0
Public sector	94.5	109.3	100.1	88.6	93.7	101.4	74.2	78.1	107.6	108.0	114.1	-
- government subsector	51.2	68.1	65.6	55.1	53.8	64.2	49.7	44.6	56.6	59.0	67.4	-
- provinces	5.7	6.4	5.7	6.4	7.7	7.4	3.1	4.0	5.6	6.7	6.7	7.1
- districts	5.2	4.5	2.8	2.8	3.4	3.4	3.0	4.0	5.9	5.2	5.2	5.3
- municipalities	32.4	30.3	26.0	24.3	28.8	26.4	18.4	25.5	39.5	37.1	34.8	35.7

Source: own study based on the Local Data Bank, Central Statistical Office 2022, 12.10.2022.

In the analyzed period, capital outlays in the public sector in Poland did not always increase, while an increase was recorded in expenditure related to current liabilities. This mechanism is characteristic especially in times of crisis, when there is a need to undertake tasks of a very current nature and related to the need to secure specific social goals. Between 2010 and 2020, investment expenditure in the public sector remained relatively high overall, with the lowest level of this expenditure recorded in 2016-2017.

In the case of the local government sub-sector, it should be noted that the largest share in investment expenditures had expenditures implemented by self-government units at the local level, including expenditures implemented by municipalities. This is consistent with the current division of competences, in which communes are responsible for a wide range of public tasks,

including tasks that require specific investment outlays. Therefore, the expenditure of municipalities significantly exceeded both the investment expenditure of self-government provinces and districts throughout the analyzed period. The situation in this respect was quite stable, with the exception of 2016, when the surveyed expenditures amounted to PLN 18.4 billion. In accordance with the adopted methodology of the conducted research, it was possible to aggregate investment expenditures made within the public sector by various groups of entities, which is graphically illustrated in Figure 1.

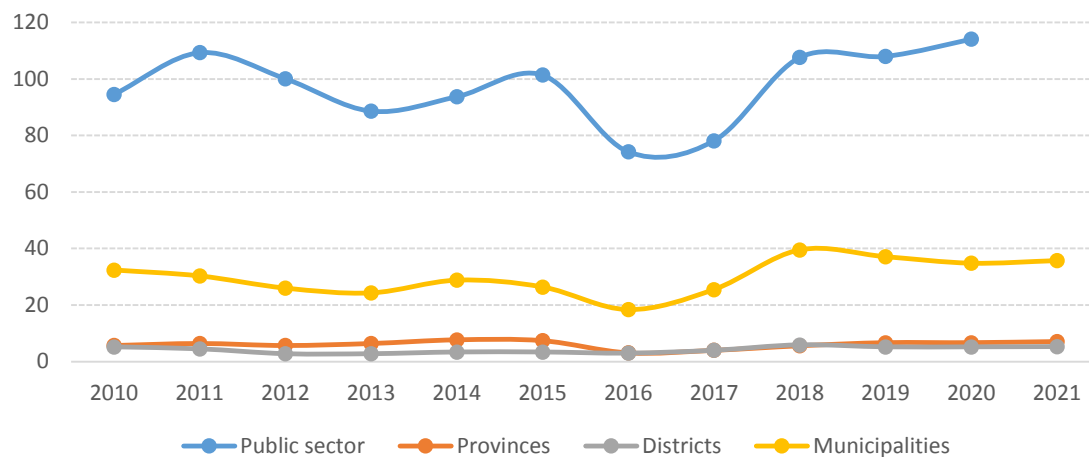


Figure 1. Capital outlays in selected groups of public sector entities in Poland in 2010-2021 (in PLN billion).

Source: own elaboration based on data from table 1.

It should be noted that investment expenditures in the public sector and in the local government sub-sector were characterized by varied dynamics of changes on an annual basis. The presented research results indicate that in the face of crisis phenomena, both in 2009-2011 and in 2020-2021, investment expenditure at the level of provinces, as well as districts and municipalities, stabilized or completely decreased compared to the previous years. The reasons for this phenomenon were determined mainly by the possibilities of shaping budget revenues from which investment expenditure were financed. In the conditions of crisis phenomena, the income situation of enterprises deteriorates and, consequently, the tax liability for income tax and value added tax (VAT) is reduced, which significantly affects the value of state budget revenues and budgets of local government units. In the event of emergencies of a crisis nature, the public sector is usually obliged to incur specific public expenditure, which are related to the need to implement social programs or to take protective and preventive measures.

The volume of investment expenditure in the public sector, including the central and local government sub-sector, in individual provinces, districts and municipalities depends on various factors. These factors are not easy to quantify due to the wide variety of parameters shaping the investment processes, as well as the large possibilities of choosing the investment financing path that entities and organizational units of the public sector have. Referring to Figures 1 and

2, it can be seen that investment expenditure in the public sector in 2010-2021 underwent significant changes, which were partly related to the effects of crisis phenomena.

In the years 2010-2012, an increase in investment expenditure in the government sub-sector and at the level of provinces was initially recorded, followed by a decrease in investment expenditure in these groups of entities. Changes in the value of investments in public sector entities were partly related to the slowdown in the growth rate of investments, and also reflected changes in preferences for spending public funds. It is worth noting that in local government units at the municipal level, a decrease in investment expenditure was recorded at that time. While in 2011 a relatively high level of expenditure was recorded, in the following years, from 2012 to 2014, a significant decrease in investment expenditure was recorded.

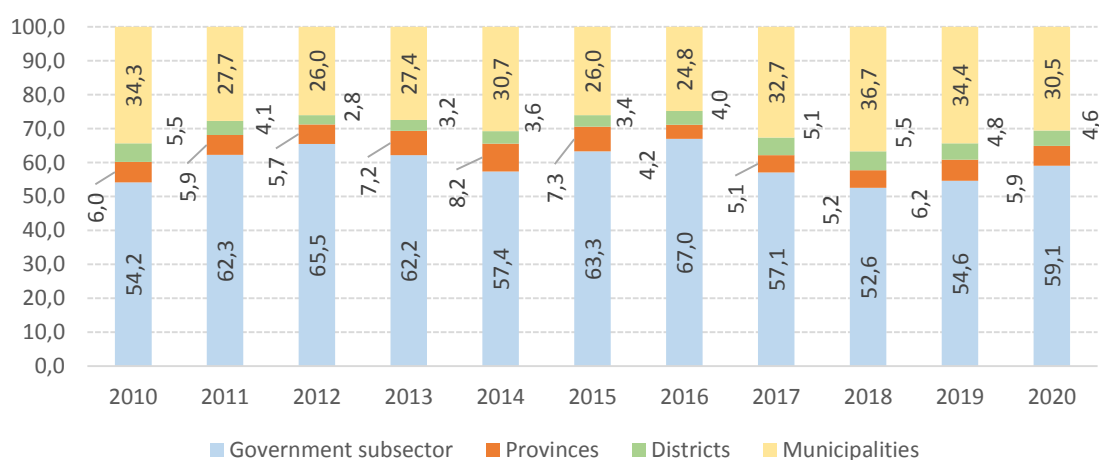


Figure 2. Structure of capital outlays in the public sector in Poland in selected years of the period 2010-2020 (in %).

Source: own elaboration based on data from table 1.

The presented graphical interpretation of the results of research on the size and structure of investment expenditure in the public sector indicates the variability of particular groups of expenditures according to groups of entities distinguished in the public sector. In a situation where the overall volume of public investment spending was decreasing, as it was in 2011-2013, in 2015-2017 and in 2019-2021, the share of government subsector spending increased at the same time. The maximum share of investment expenditure of the government subsector took place in 2016, when the total volume of public investments was the lowest during the period under review. In 2020, in view of the already noticeable symptoms of the crisis, a renewed increase in the share of investment expenditure implemented by the government subsector can be noticed and this phenomenon should be expected to continue in the coming years.

As has already been mentioned, crisis phenomena usually result in a reduction in investment expenditure, and are often associated with an increase in current expenditure of the public sector, related to the need to finance various tasks of a social nature. In the local government sub-sector in 2020-2021, i.e. during the crisis caused by the COVID-19 pandemic, a slight

increase in investment expenditure was recorded in districts and municipalities. Government expenditure at that time was also increasing, but it was also associated with a change in the structure of financed tasks. In addition, the increase in investment expenditure took place in the need to increase current expenditure, mainly for social reasons, but also as a result of protective measures aimed at the enterprise sector.

It can be assumed that in the conditions of crisis in the public sector there are multidirectional changes in the financing of investments, while the effects of crisis factors are revealed in investment budgets with a certain delay, which may involve the need to implement already started investments even in crisis conditions. In the case of Poland, EU funds also had a significant impact on the level of investment expenditure. Observation of statistical data for the years 2014-2015 and the period 2017-2020, when the level of investment increased in the entire public sector, leads to such conclusions.

Despite the long-term activity of the state and local government in the processes of strengthening social and economic cohesion, the spatial disproportions observed in Poland in terms of socio-economic potential are characterized by a significant degree of consolidation, resulting from the persistence of different economic growth rates in various administrative or functional territorial systems. Differences can be examined broken down into urban and rural areas, broken down by administrative units at the local, subregional or regional level. Reducing both the causes and consequences of negative economic phenomena in the territorial dimension remains an important element of the activities of public administration at various levels, which is manifested, on the one hand, in the development and implementation of support programs for areas affected by marginalization processes, and on the other hand, also programs aimed at maintaining the dynamics of growth in economically strong areas. In accordance with the approach developed within the EU, planning and supporting development at the regional level is particularly important. The effects obtained depend to a limited extent on public intervention in terms of investment expenditures, while the sustainability of economic development in regions is conditioned by the investment activity of all economic entities operating in the national economy, although spatial unevenness in the distribution of private sector entities should also be indicated (Nazarczuk, 2013).

Due to the development differences indicated earlier, an important approach was to examine investment outlays in the economy per capita in the province system. Partial results of the research for 2010 and 2020 are graphically illustrated in Figure 3. In addition, investment outlays in the national economy in total are also presented, taking into account the division into the public and private sectors.

The highest level of total investment expenditure per capita both in 2010 and in 2020 was recorded in the Mazowieckie province, respectively 8.2 thousand PLN and 13.0 thousand PLN. The results of the Mazowieckie province are related to the administrative system adopted for the analysis, in which including the capital city of Warsaw significantly increases the discussed expenditure ratio. Using the statistical system, the area of the Mazowieckie province without

Warsaw (i.e. the "regional Mazowieckie" region) would occupy a much lower position in terms of the value of investment expenditure per capita. The leading economic function of the main urban (metropolitan) center can be seen in most provinces, however, as other studies also indicate, in the case of the Mazowieckie province, the strong position of Warsaw is particularly clear (Tarkowski, 2015).

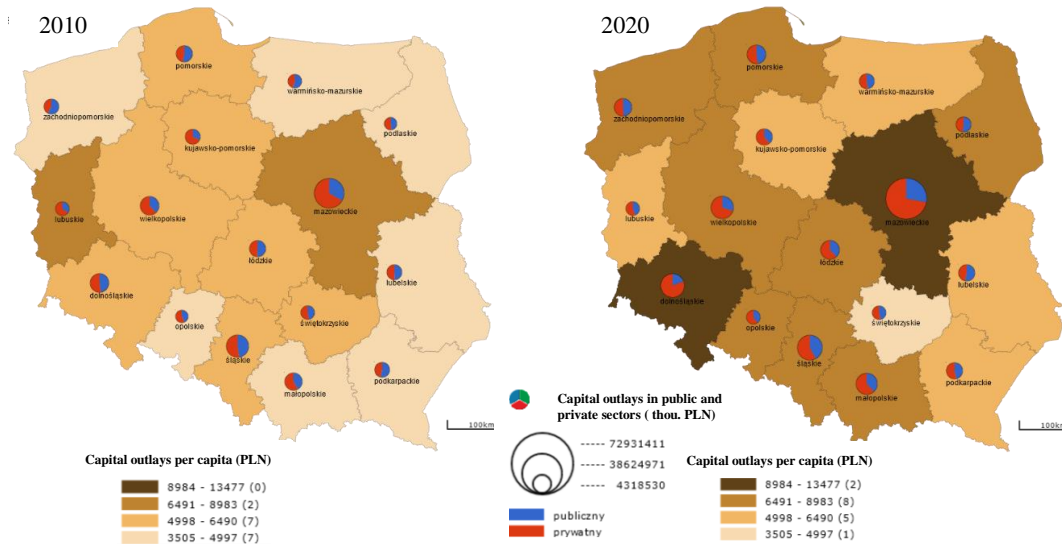


Figure 3. Capital outlays in the national economy per capita (in PLN) and capital outlays broken down by the public sector and the private sector (in PLN thousand) by provinces in Poland in 2010 and 2020.

Source: own elaboration based on data from the Atlas of Regions Knowledge Database, <http://swaid.stat.gov.pl/SitePagesDBW/AtlasRegionow.aspx>, access on 21.10.2022.

In the presented research results, an important element of the assessment of differences in the level of investment is the investment rate in the national economy in general and the investment rate in individual provinces. According to the definition adopted by the Central Statistical Office, the investment rate reflects the ratio of the value of gross fixed capital formation (which is considered identical to investment expenditure) to the value of the Gross Domestic Product. In the period 2010-2014, the investment rate in the system of provinces in Poland was at a fairly stable level and, despite noticeable differences of several percentage points, the level of the indicator was close to 20%. In the years 2015-2019, slightly greater fluctuations in the value of the examined indicator were observed and its decrease compared to previous years, both on average for Poland and in all provinces. Higher values of the investment rate in provinces with lower economic potential as compared to the values of the indicator in provinces defined as more economically developed were characteristic. The results of the study on the level of the investment rate in the economy broken down by provinces in 2010-2019 are presented in Table 2 and graphically illustrated in Figure 4, for selected provinces at the background of Poland.

At the beginning of the analyzed period, Lubuskie, Podkarpackie, Warmińsko-Mazurskie and Lubuskie provinces were characterized by a relatively high investment rate. In the years 2010-2012, the investment rate in these provinces remained at the highest level in the country,

reaching even 29.1% in Lubuskie. A relatively high rate was also recorded in Podlaskie and Świętokrzyskie provinces, where it reached their maximum values of respectively: 25.8% and 24.0%. Since 2013, in most provinces, the investment rate has clearly decreased, and despite the slowdown of this decline, recorded in 2015, in the next two years the value of the indicator remained at a low level. Again, an increase was recorded from 2018, although already in 2019 the investment rate decreased in some provinces, such as in the case of Warmińsko-Mazurskie, Łódzkie, Lubuskie and Zachodniopomorskie.

Table 2.

Investment rate in the national economy broken down by provinces in 2010-2019 (in %)

Specification	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Poland	19.7	20.5	19.6	19.0	20.1	20.4	18.5	17.6	18.7	18.9
Dolnośląskie	18.9	19.3	18.8	19.6	19.8	19.1	18.5	18.9	20.3	22.3
Kujawsko-Pomorskie	22.2	21.7	18.5	17.6	19.8	22.8	15.5	15.6	16.7	16.1
Lubelskie	20.7	23.1	20.9	20.0	21.4	20.8	15.3	15.9	18.3	19.3
Lubuskie	29.1	29.1	21.7	19.5	17.0	19.7	18.6	17.1	17.3	16.8
Łódzkie	20.5	22.4	23.2	21.2	20.1	20.7	17.3	16.2	16.6	17.1
Małopolskie	20.1	20.3	19.9	18.6	19.1	20.4	17.3	16.4	16.6	17.0
Mazowieckie	19.0	18.5	18.2	17.9	20.2	19.5	18.8	18.1	18.7	18.6
Opolskie	20.7	19.7	17.6	18.6	20.5	26.4	26.5	21.3	20.4	21.5
Podkarpackie	24.4	28.5	26.3	23.9	22.5	21.0	18.6	19.0	20.5	20.5
Podlaskie	22.0	25.8	22.0	20.7	24.3	23.9	18.5	20.3	21.5	22.3
Pomorskie	21.5	20.9	21.6	19.6	20.8	21.7	19.5	20.1	19.4	16.6
Śląskie	18.3	19.1	17.2	17.1	17.4	17.0	16.8	16.1	16.6	17.1
Świętokrzyskie	24.0	22.1	21.1	16.7	16.4	18.1	14.0	14.4	14.8	15.3
Warmińsko-Mazurskie	22.6	24.5	23.2	19.2	19.7	22.4	19.8	19.1	21.8	19.2
Wielkopolskie	19.5	19.4	19.3	16.7	18.8	19.8	18.4	16.9	17.4	17.6
Zachodniopomorskie	19.9	19.9	21.5	23.5	21.5	21.4	16.2	18.0	18.9	17.8

Source: own study based on the Local Data Bank, Central Statistical Office and the Macroeconomic Data Bank of the Central Statistical Office, access on 20.09.2022.

In provinces characterized by stronger economic potential (Dolnośląskie, Mazowieckie, Śląskie, Pomorskie), the investment rate remained at a lower level compared to all provinces, while this level was stable. The provinces in which the economy is assessed as weaker (Lubuskie, Podkarpackie, Świętokrzyskie) were characterized by significant fluctuations in the level of the analyzed indicator and, as a rule, a decrease in the value of the indicator in 2010-2016. In some provinces (Opolskie, Podlaskie, Zachodniopomorskie) the years 2014-2016 were characterized by the highest values of the investment rate.

In the period 2016-2019, the investment rate in the national economy also remained at a stable level, despite the fact that the volume of investment outlays in the public sector, as indicated earlier, was clearly increasing. It should be noted, however, that public investments generated only a part of the analyzed indicator, which was about 1/3 of the value of the indicator for the national economy, while the remaining part depended on the activity of private sector entities¹. According to the data published by the Macroeconomic Data Bank of the Central Statistical Office, from 2020 there was already a noticeable decrease in the value of the

¹ According to data from the Macroeconomic Data Bank of the Central Statistical Office, 28.10.2022.

investment rate in the public and private sectors, and in terms of the entire national economy, the investment rate amounted to 18.3%. The impact of the crisis phenomena was clearly visible in 2021, when the investment rate in the national economy stood at 17.0%, and separately in the public sector at 5.7%. It should be emphasized that changes in the streams of external investment capital transferred from the EU budget, observed in this period, were of significant importance here. On the other hand, also important for the course of changes in the examined indicator were changes in the level of GDP achieved in the scale of the entire national economy, as well as in regional terms, in the areas of individual provinces.

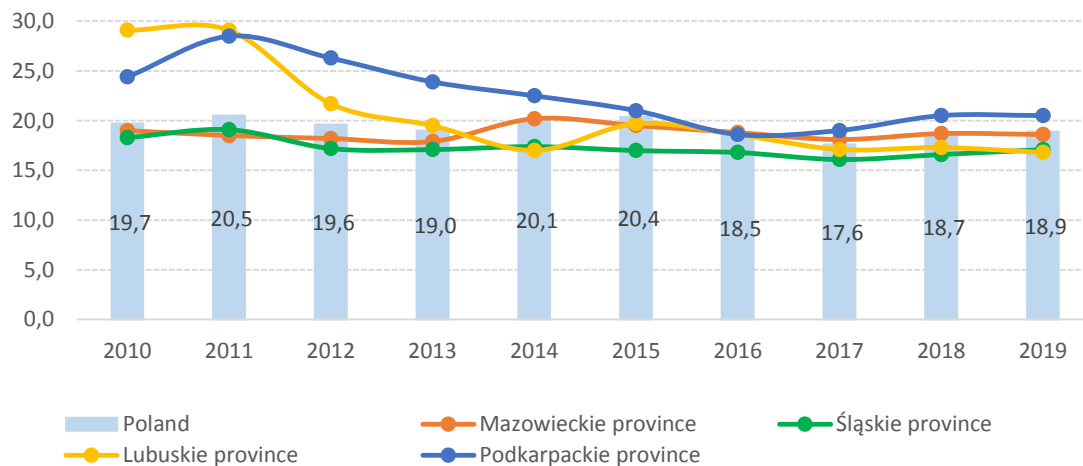


Figure 4. Investment rate in the national economy in Poland and in selected provinces in 2010-2019 (in %).

Source: own elaboration based on data from table 2.

Bearing in mind the diversity of entities and organizational units of the public sector, undertaking public investments, it is also worth pointing to investment expenditure financed by the government subsector at the level of provinces. Investment expenditure related to financing the tasks of the government subsector are of a specific nature and are related to the implementation of tasks that are aimed at providing public services at the state level, and therefore they may be public expenditure related to internal security, external security, health protection, social policy or other objectives, the implementation of which takes place in individual regions and is financed at the government level.

As shown in Table 3, in the years 2010-2020 the government subsector undertook diversified investment activity in the territorial breakdown of individual provinces. The largest amount of funds was spent in the Mazowieckie province, where in 2010-2020 the level of expenditure was between PLN 8.0 billion and PLN 15.8 billion. The volume of investment expenditures of the government subsector in the Mazowieckie province was significantly shaped by financing investments in the field of road and rail transport, which were largely related to the role of the capital city of Warsaw and resulted from the geographical location of the Warsaw agglomeration and transport accessibility in relation to the diverse functions that the city performs towards the needs of the whole country.

Table 3.

Total value of capital outlays in the government sub-sector broken down by provinces in 2010-2020 (in PLN billion)

Specification	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dolnośląskie	5.2	5.7	3.7	3.1	3.0	4.2	3.5	2.9	4.0	2.8	2.8
Kujawsko-pomorskie	1.3	3.6	2.0	1.8	2.0	4.6	1.6	1.5	2.4	2.5	2.7
Lubelskie	1.9	2.8	2.9	2.4	1.6	2.2	1.2	1.8	2.4	3.6	3.9
Lubuskie	1.3	4.3	2.2	1.6	1.1	1.4	1.1	0.9	1.1	0.9	1.4
Łódzkie	4.4	6.9	6.3	5.2	3.2	3.5	1.6	1.7	1.7	3.0	3.7
Małopolskie	3.1	3.8	5.4	4.1	4.4	5.3	3.1	2.6	4.6	5.0	4.9
Mazowieckie	8.0	9.2	11.2	10.4	11.5	15.8	13.2	10.9	12.4	12.9	13.0
Opolskie	0.9	0.7	0.6	1.1	1.0	0.9	0.7	0.5	1.2	1.3	1.6
Podkarpackie	3.0	5.1	4.9	3.6	2.3	2.2	2.2	1.4	1.8	2.7	3.4
Podlaskie	0.8	1.0	1.2	1.4	2.0	1.7	0.7	1.1	1.0	1.7	2.5
Pomorskie	4.1	3.9	3.8	3.8	4.1	4.8	5.1	3.5	6.7	3.9	5.5
Śląskie	8.0	9.3	8.0	7.1	7.4	6.3	6.4	6.9	6.7	8.2	9.9
Świętokrzyskie	1.4	1.3	1.2	0.6	0.6	1.4	1.2	0.5	0.5	1.1	1.3
Warmińsko-mazurskie	1.8	2.9	3.1	1.7	1.4	2.4	2.8	1.9	2.3	1.7	2.2
Wielkopolskie	3.4	4.6	5.2	3.5	4.0	4.3	3.2	3.6	4.6	5.1	4.0
Zachodniopomorskie	2.8	3.0	3.9	3.6	4.2	3.2	2.4	2.9	3.2	2.9	4.6

Source: own study based on the Local Data Bank, Central Statistical Office, 20.09.2022.

In the remaining provinces, that kind of expenditure were at various levels. Relatively high expenditure was recorded in the Śląskie province and in the Wielkopolskie, Małopolskie and Łódzkie provinces. There is a regularity in this case, consisting in increasing investment outlays in regions with a low level of socio-economic development. Comparing investment expenditure in the years 2010-2020, there are noticeable fluctuations in the level of government subsector expenditure in less developed provinces, but also clear periods of increase in the amounts spent in the years 2010-2013 and especially in the years 2017-2020. In 2020, over PLN 3.9 billion was spent in Lubelskie province, which was also the maximum amount of expenditure in the period under review, while in 2010 the amount of government subsector expenditure in this province amounted to PLN 1.9 billion. A similar situation took place in the Podkarpackie province, where PLN 3.4 billion was spent in 2020, which was an increase compared to the expenditure incurred in previous years from 2017, although it should be noted that in 2010 expenditure amounted to PLN 3.0 PLN billion, and their maximum value for the analyzed period, i.e. PLN 5.1 billion, was recorded in 2011. A similar situation occurred in the Podlaskie and Warmińsko-Mazurskie provinces.

In provinces of a higher level of development, investment outlays financed from government funds were at a relatively high level, but they were characterized by a clearly lower growth rate of these expenditures in the period 2017-2020. This mechanism of financing tasks from government funds can be considered an element of the cohesion policy, according to which attempts are made to eliminate differences in the level of socio-economic development of provinces and government funds are allocated for these purposes.

Changes recorded in the years 2010-2020 in terms of the level of investment expenditure under government funds are illustrated in Figure 5, which presents the results of calculations regarding investment expenditure in 2010 and in 2020. The graphic illustration shows changes

in the directions of financing investments at the central government level in the territorial breakdown, which have been mentioned and there is a clear increase in investment expenditure in provinces of high dynamics of economic development, such as Małopolskie, Dolnośląskie and Pomorskie. Mazowieckie and Śląskie provinces invariably occupied a dominant position in terms of the level of government subsector expenditure.

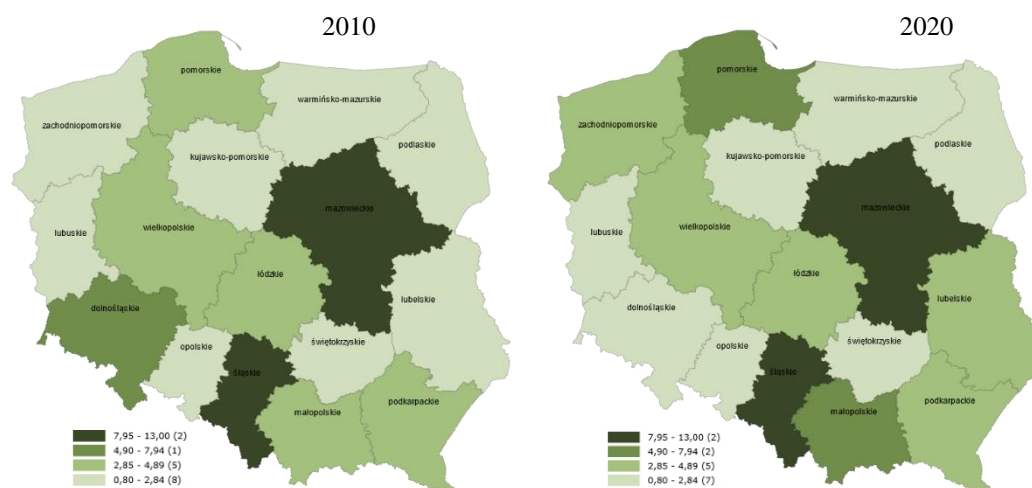


Figure 5. Total investment outlays in the government sub-sector by voivodships in 2010 and 2020 (in PLN billion).

Source: own study based on data from the Knowledge Bases - Atlas of Regions, <http://swaid.stat.gov.pl/SitePagesDBW/AtlasRegionow.aspx>, 21.10.2022.

An increase in investment expenditure was also observed in provinces with a lower level of economic development, such as Lubelskie or Zachodniopomorskie. As mentioned earlier, the funds allocated for investments within central government resources are aimed at implementing investment projects that would allow to eliminate differences or even reduce disproportions in the level of socio-economic development through investments supporting these processes. The category of government expenditure includes investments strictly related to improving the condition of the economy, such as investments in the energy sector, but also investments related to the construction of basic infrastructure components. The above-mentioned provinces, due to various, including historically shaped conditions, were characterized by a lower level of infrastructural development. Therefore, it is reasonable to incur higher investment outlays in order to reduce the existing disparities.

In addition to financial resources from government sources, funds from the budgets of local government units at the local and regional level, as well as funds from business entities of the private sector, were also allocated for investment purposes. An extension of the analysis in the provinces breakdown can therefore be the study of investment expenditure from the budgets of municipalities, which for the purposes of the study have been aggregated to the level of subregions (NUTS 3). Such a formula made it possible to present the research results in the form of choropleth maps in Figure 6. During the research, the full range of data on such expenditure was aggregated and analyzed, but the graphical presentation focused on the results

for 2018 and 2021. This was to illustrate the situation that took place before the occurrence of the crisis phenomena related to the COVID-19 pandemic and also the most current (in terms of availability of data for the full annual period) situation observed in 2021, when the economy was significantly slowed down administratively due to the ongoing pandemic.

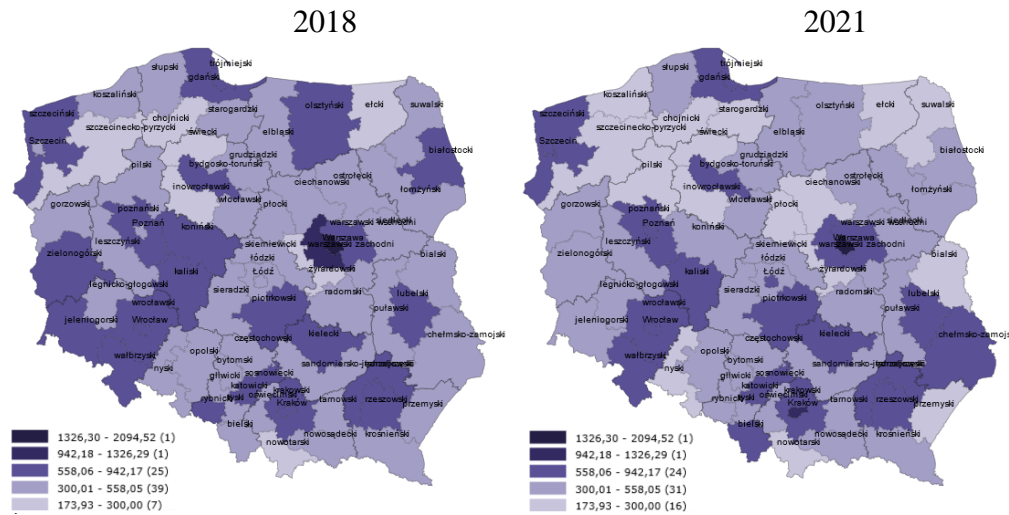


Figure 6. Investment expenditure of municipalities' budgets aggregated by subregions (NUTS 3) in 2018 and 2021 (in PLN million).

Source: own study based on data from the Knowledge Bases - Atlas of Regions, <http://swaid.stat.gov.pl/SitePagesDBW/AtlasRegionow.aspx>, 21.10.2022.

The results of the research indicate a noticeable decrease in investment outlays carried out by municipalities in the western and north-eastern areas of Poland. It was possible to maintain the level of expenditure mainly in the central and south-eastern subregions, including those surrounding the main urban agglomerations and covering the largest cities, such as Łódź, the Tri-City subregion and also Warsaw, which stood out against the background of the country with a significantly higher level in the examined expenditure category. In addition, also in large cities such as Poznań, Kraków and Szczecin, an increase in investment outlays was recorded between 2018 and 2021. An increase in the level of investments financed from municipalities' budgets was also found in Bielski subregion and in Chełmsko-Zamojski subregion.

The total results of the analysis, covering the years 2010-2021, allow to conclude that in the analyzed period, in the areas of all the examined provinces, although with varying intensity, activities were carried out to support economic development and reduce significant development barriers in changing economic conditions. The observed streams of investment outlays related to the implementation of public tasks should be assessed as the result of various forms of planning and evaluation of investment programs and projects undertaken earlier, as well as developing the ability to adapt to changes in the external environment and using the development potential determined by endogenous factors in various territorial dimensions. In the modern market economy, it is expected that despite the changing macroeconomic conditions, public investments will be characterized by a fixed scope of availability and an accepted level of quality. Striving to meet social needs in the conditions of economic crises

requires adapting management methods in the public sector at the state level and in the regional and local economy, including the search for solutions to improve the efficiency of using even more limited investment funds.

4. Conclusion

Both theoretical research and the collected empirical material prove that investments in the public sector in the conditions of crisis phenomena are an important factor in stimulating socio-economic development, as well as mitigating the effects of crisis. The results of empirical research have revealed that there are various changes in the spending of public funds, especially budgetary funds of local government units, as well as funds from the state budget resources. Despite the earlier crisis phenomena, as well as the currently high economic instability, entities classified as part of the public sector at the central, as well as at the regional and local level, have carried out a significant range of investment activities. Thus, they strengthened their role as an important participant in economic processes, co-responsible for stabilizing development processes and improving the living conditions and economic activity of local communities.

As a result of the research, which covered the years 2010-2021, it was established that the national economy maintained a stable level of investment expenditure. The scope of expenditure covered the implementation of public objectives, i.e. it was the effect of the activity of entities and organizational units of the public sector, although it should be emphasized that it reflected development processes in the enterprise sector to a greater extent. The obtained research results showed that despite clear changes in the economic situation in Europe in the last decade, relatively favorable conditions for conducting business activity were observed in the market economy in Poland, as well as intensive investment activity of public sector entities at various territorial levels.

Considering the consequences of crisis phenomena, especially when it is still difficult to determine the depth of negative changes caused in the economy and in enterprises, a serious problem is the willingness to finance investments in the private sector, which reacts quickly to macroeconomic changes. The COVID-19 pandemic and the war in Ukraine, overlapping certain effects, caused a deterioration of the economic situation on a global scale on an unprecedented scale. This type of crisis is rated as one of the biggest in almost 80 years. This means that far-reaching adjustments should also be expected in the area of private investment. It may therefore turn out that maintaining the ability to finance public investments will be a key factor stabilizing the national economy in Poland. However, it should be remembered that solutions that increase public spending in times of crisis should always be of a temporary nature due to the increase in the budget deficit and, consequently, also public debt, which will also have an impact on the economy in later periods, after the above-mentioned phenomena caused by crises subside.

References

1. Cenquier, A. (2016). Infrastruktura publiczna – wybrane problemy. *Kwartalnik Kolegium Ekonomiczno-Społecznego. Studia i prace, No. 2*, pp. 65-75.
2. Dworakowska, M. (2015). Determinanty finansowe wzrostu inwestycji jednostek samorządu terytorialnego. *Studia z polityki publicznej, No. 4(8)*, pp. 47-58.
3. Gubernat-Ulatowski E. (2016). Potencjał finansowy i inwestycyjny a aktywność inwestycyjna jednostek samorządu terytorialnego, *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, No. 294*, pp. 47-58. Retrieved from: <https://www.sbc.org.pl/publication/284328>.
4. Jarosiński, K. (2001). Kierunki i perspektywy rozwoju lokalnego w dobie globalizacji. In: J. Osiński. *Globalna gospodarka – lokalne społeczeństwa. Świat na progu XXI wieku* (pp. 125-138). Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej.
5. Jarosiński, K. (2022). Finansowanie publicznych projektów inwestycyjnych w zmiennym otoczeniu makroekonomicznym. In: J. Wielgórska-Leszczyńska, M. Matuszewicz, *Teoretyczne i praktyczne aspekty w naukach ekonomicznych* (pp. 137-154). Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej.
6. Jarosiński, K., Opalka, B. (2015). Finansowanie inwestycji w sektorze publicznym w Polsce w latach 2007-2013 w warunkach członkostwa w Unii Europejskiej. *Studia i Prace Kolegium Zarządzania i Finansów, No. 146*, pp. 9-28.
7. Jarosiński, K., Opalka, B. (2021). *Zarządzanie w sektorze publicznym wobec procesów rozwoju społeczno-gospodarczego*. Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej.
8. Kleer, J. (2006). *Globalizacja a państwo narodowe i usługi publiczne*. Warszawa: PAN.
9. Klimczuk, A. (2021). Pandemia COVID-19 z perspektywy teorii ryzyka. In: A. Bartoszewicz, K. Księżopolski, A. Zybala (eds.), *Polska... Unia Europejska... Świat... w pandemii COVID-19 – wybrane zagadnienia. Wnioski dla kształtowania i prowadzenia polityki publicznej* (pp. 34-56). Warszawa: Elipsa.
10. Kogut-Jaworska, M. (2008). *Instrumenty interwencjonizmu lokalnego w stymulowaniu rozwoju gospodarczego*. Warszawa: CeDeWu.
11. Kollatz-Ahnen, M., Roick, M.J. (2018). Financing public sector investment. *Public Sector Economics, Vol. 42, Iss. 2*, pp. 111-124. Retrieved from: http://www.pse-journal.hr/en/archive/financing-public-sector-investment_2627/.
12. Laursen, T., Myers, B. (2009). Public Investment Management in the New EU Member States: Strengthening Planning and Implementation of Transport Infrastructure Investments. *World Bank Working Paper, No. 161*, <https://doi.org/10.1596/978-0-8213-7894-6>.

13. Nazarczuk, J. (2013). *Potencjał rozwojowy a aktywność inwestycyjna województw i podregionów Polski*. Olsztyn: UWM w Olsztynie.
14. Ocolisanu, A., Dobrota, G., Dobrota, D. (2022). The Effects of Public Investment on Sustainable Economic Growth: Empirical Evidence from Emerging Countries in Central and Eastern Europe. *Sustainability*, Vol. 14, Iss. 14. <https://doi.org/10.3390/su14148721>.
15. OECD (2019). Effective Multi-level Public Investment. *OECD Multi-level Governance Studies*. Retrieved from: https://www.oecd.org/effective-public-investment-toolkit/Full_report_Effective_Public_Investment.pdf.
16. Opalka, B. (2020). Conditions and Possibilities of Long-Term Public Debt Management. *Journal for Social Sciences*, Vol. 4, No. 1, pp. 110-119. Retrieved from: <https://ideas.repec.org/a/smo/jorn11/v4y2020i1p110-119.html>.
17. Opalka, B. (2021). Zmiany warunków gospodarowania i ich wpływ na inwestycje publiczne. In: J. Wielgórska-Leszczyńska, M. Matuszewicz, *Nauki ekonomiczne przed, w czasie i po pandemii* (pp. 331-343). Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej.
18. Quak, E. (2018). *The public investment gap: the need for external finance to increase public investment (K4D Helpdesk Report No. 382)*. Brighton, UK: Institute of Development Studies.
19. Sawant, R.J. (2010). *Infrastructure Investing: Managing Risks & Rewards for Pensions, Insurance Companies & Endowments*. Hoboken: John Wiley & Sons.
20. Tarkowski M. (Ed.) (2015). *Atrakcyjność inwestycyjna województw i podregionów Polski*. Gdańsk: Instytut Badań nad Gospodarką Rynkową.

CHANGES IN STRATEGIC RESPONSES OF SELECTED LOW BUDGET AIRLINES FROM DIFFERENT CONTINENTS IN RESPONSE TO THE GLOBAL COVID-19 PANDEMIC

Aneta PARKER¹, Marzena KACPRZAK², Izabela WIELEWSKA^{3*}

¹ Warsaw Management University; aneta.parker@icloud.com, ORCID: 0000-0001-8709-7148

² Warsaw University of Life Sciences – SGGW; marzena_kacprzak@sggw.edu.pl,
ORCID: 0000-0002-0680-8241

³ Bydgoszcz University of Science and Technology; wielewska@pbs.edu.pl, ORCID: 0000-0002-1721-6890

* Correspondence author

Purpose: The aim of this paper is to indicate changes in strategy, financial, hygienic and service behaviour in relation to customers and aviation personnel. These changes are a response to the global COVID-19 pandemic.

Design/methodology/approach: The paper uses the desk research method of analysis. The analysis of publicly available values from the annual reports of selected low-cost airlines from six continents, i.e. Europe, Asia, North America, Australia, Africa and New Zealand and the examples described in the work made it possible to establish facts, verify data and present results. The research concerns not only the situation before and during the COVID-19 pandemic, but also predicts the future of individual companies.

Findings: The considerations presented in the paper indicate that low-cost airlines representing individual regions of the world had utmost difficulties in adapting to the changing conditions which resulted from the COVID-19 pandemic. They needed government support. A third of the air fleet was grounded, many employees in the aviation sector lost their jobs or received only 50% of their wages; furthermore, international travel decreased significantly. Only the cargo sector, which had been unprofitable for years, benefited from the pandemic due to the transport of global cargo.

Practical implications: Several types of support for the aviation sector are recommended, i.e. rebuilding passenger confidence in air transport, introducing a uniform and globally recognized digital COVID certification, and quick and affordable access to tests.

Social implications: Social needs should always come first and implemented solutions should be adapted accordingly.

Originality/value: The article is an original approach to finding solutions in crisis situations that could improve the situation of the aviation industry and its passengers.

Keywords: airlines, world travel, airline staff during the pandemic, COVID-19, crisis management.

Category of the paper: research paper.

1. Introduction

The emergence of an unusual form of severe pneumonia in December 2019, which later turned into a pandemic on a global scale, surprised the health services of the city of Wuhan in the Chinese province of Hubei, inhabited by 9 million residents, in the early stages of its development (Duszyński et al., 2020). As early as three months after its detection, the disease was named COVID-19, and three days later the pathogen causing it began to be described as the SARS-CoV-2 virus (Duszyński et al., 2020). Over the next few months, as the United Nations wrote in its post-conference article titled "The Impact of the COVID-19 Pandemic on Trade and Development" of September 23, 2020, more than 31 million people were infected with the virus, and more frightening figures revealed that up to that day, 963,000 deaths (Figure 1) were attributed to COVID worldwide (United Nations, 2020).

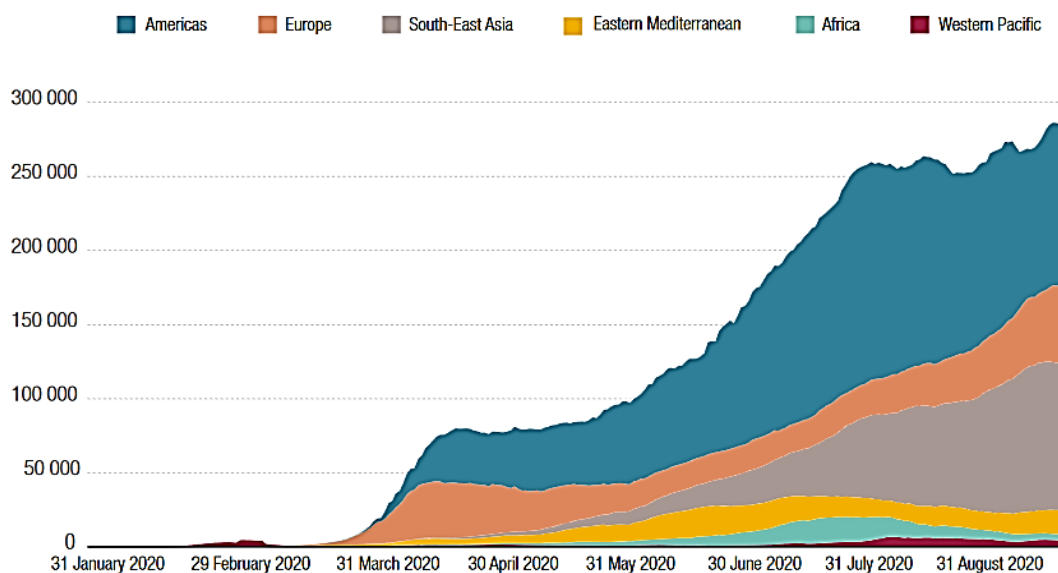


Figure 1. The SARS-CoV-2 virus in individual regions according to the markings of the World Health Organization. Adapted from: United Nations "Impact of the COVID-19 Pandemic on Trade and Development, Transitioning to a New Normal" by United Nations, Geneva 2020.

In the first wave, weekly deaths attributed to COVID-19 peaked in the week around 13 April 2020 at just over 51,000. This dropped down to fewer than 29,000 per week in late May 2020, but by mid-September 2020, deaths per week had increased again to around 37,000 (United Nations, 2020).

A more detailed analysis of the data showed that global economic development suffered much more than during the global economic crisis in the financial and banking markets in late 2008 and early 2009 (Figure 2).

The United Nations Conference on Trade and Development (UNCTAD) predicted that the gross domestic product (GDP) would fall by about 4.3 percent in 2020, which meant that developed economies were hit harder in 2020 than developing countries, at -5.8% and -2.1%, respectively (Figure 2). While at the turn of 2008 and 2009 this decline was almost

imperceptible (or at least not on such a large scale as in 2020) in less developed countries, and at -3.4% in richer economies.

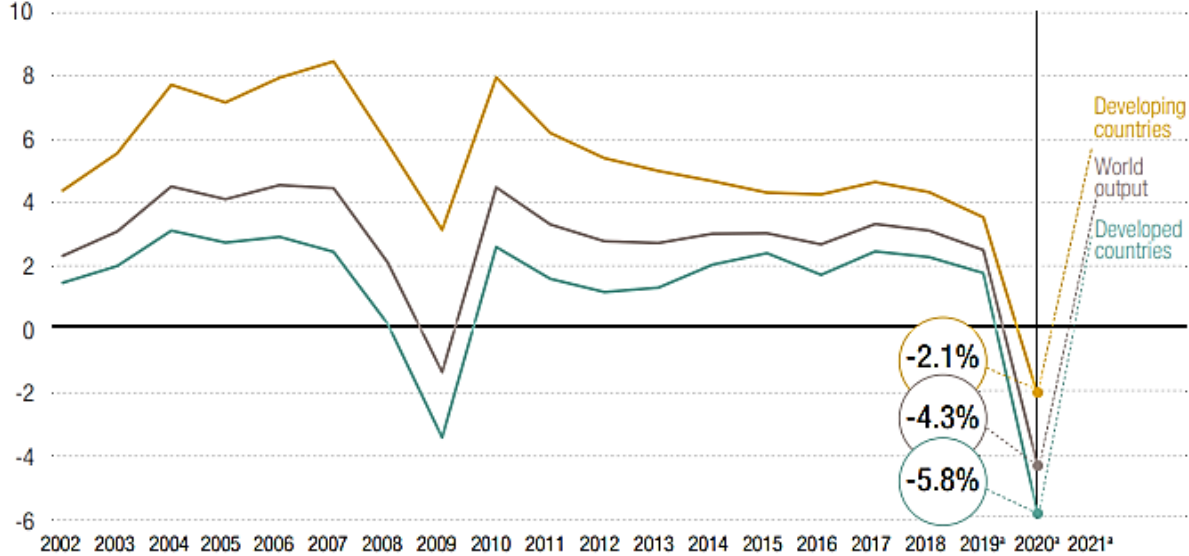


Figure 2. Trends in global economic development with percentage changes in less and more developed countries. Adapted from: United Nations Conference on Trade and Development by United Nations, Geneva 2020.

The only economic plane that has not suffered as a result of the pandemic, but actually considerably profited from this global crisis, is pharmacy. Medical products related to COVID-19, such as personal protective equipment, ventilators, thermometers and disinfectants recorded a very high growth in the second quarter of 2020. Sales of this type of products increased by 186% compared to the same quarter of the previous year. Other, non-medical, but heavily related to COVID-19 products such as office equipment including Wi-Fi routers, laptops or portable mass storage enjoyed a strong 34% growth in the second quarter (United Nations, 2020) (Figure 3).

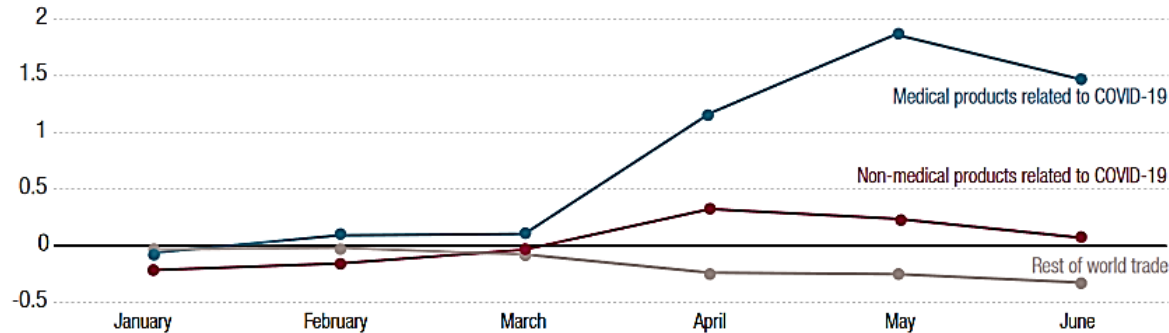


Figure 3. World trade in medical goods. Adapted from: United Nations Conference on Trade and Development by United Nations, Geneva 2020.

Such great changes in financial values were reflected in many areas of modern life. Many social life centres were closed, remote office operation and teaching in many educational institutions were introduced, the economy and many aspects of management changed.

In addition, there were changes in almost all areas of global tourism, travel and global air traffic. Statistical studies show that in the first half of 2020, global tourist travel decreased by 65% compared to the same period in the preceding year. The largest decrease was observed in:

- East Asia and the Pacific - 72%,
- Europe - 66%,
- Africa - 57%,
- Middle East - 57%,
- the Americas - 55%.

The year 2020 saw about 1 billion fewer tourist trips, which translates to US\$ 1.2 trillion lost in tourism revenue and about 120 million jobs lost due to the pandemic (United Nations, 2020). It should be noted that not all places in the world were affected to the same extent. The pandemic had a much greater impact on economies heavily dependent on tourism, e.g. in Jamaica, where tourism accounted for as much as 20% of the GDP in 2018, two years later it suffered a loss of nearly 20% of the aforementioned financial value (United Nations, 2020).

On account of the global pandemic, many airlines also found themselves at a crossroads where their business models needed to be carefully reassessed and adjusted accordingly. The drastic fall in demand caused by the crisis put resilience and financial resources at the limit. Neither September 11 2001, nor the global financial crisis of 2008, nor the volcanic eruption in Iceland in 2010 were comparable to the financial shock brought by the COVID-19 pandemic (Bouwer et al., 2021). Most airlines required government support to stay in business. However, not all airlines have been affected to the same extent. Furthermore, the reasons why some business models may have been more successful during the crisis may not necessarily be aligned with expected changes in the post-COVID-19 era. The assessment of both cases became the aim of this paper.

2. World Situation

April 2020 saw the largest decrease in flights worldwide - 55%, and traffic data fell by 92.8% which is equivalent to a loss of 1.7 million passengers. On average, the aircraft's load factor was between 50% and 60%, with the lowest point of 27%. By the end of 2020, almost 51% of the total. The European fleet was grounded. The connectivity of the world's cities also decreased. In addition, European airlines reported revenue losses of €22.2 billion. European airports lost up to €33.6 billion as daily traffic decreased by 73% compared to 2019 (Bouwer et al., 2021).

Until the outbreak of the pandemic and the crisis associated with it, airports constituted the largest sub-sector of aviation in most regions outside North America. Globally, airports enjoyed combined annual economic gains of an average of \$5 billion between 2012 and 2019, when their economic margins were around 3% (Bouwer et al., 2021).

Airports in different regions of the world achieved great financial results for a variety of reasons (Bouwer et al., 2021):

- in the Asia-Pacific region due to the competitiveness of its climate,
- Central and Eastern regions due to their location,
- Asian regions (primarily those located on the Indian peninsula) due to migrating demographics.

The declining traffic led to major economic losses of \$32 billion, or 45% in 2020. The Airports Council International estimates that airport performance slightly improved in 2021, attracting 26% more revenue than in 2020. The only points whose financial balance sheets confirm a specific resistance to pandemics are the shipping and cargo sub-sectors. In 2020, both managed to generate healthy economic profits: 4% for shippers and 9% for air cargo carriers. In fact, the only five profitable airlines in 2020 (AirBridgeCargo, Atlas Air, Cargojet, Cargolux and Kalitta) were cargo carriers (Bouwer et al., 2021).

In the annual balance sheet, the sub-sectors with low fixed costs financially fared much better even though revenue flows decreased due to lower passenger traffic or fewer flights. Although revenue flows for catering companies and ground services largely depend on passenger traffic and the number of flights, a large part of their workforce is contract temporary staff, not a permanently employed group that requires constant financial security. This flexibility allowed these particular companies to partially compensate for the losses incurred as a result of the suppressed air traffic during the pandemic. Catering and ground services losses (\$2.4 billion and \$3.2 billion, respectively) were therefore less than those of companies in many other aviation sub-sectors (Bouwer et al., 2021). Unfortunately, the employment of contract workers caused a completely different post-pandemic problem. Financial instability meant that many of the people employed contractually were tired of this kind of uncertainty and found work in other economic sectors, which ultimately resulted in shortages of ground service at many airports today. Flights are delayed or cancelled, travellers have to wait in mile-long queues, and those employees who remained have irregular work schedules and are often overworked, which can affect not only the comfort of travel but – more importantly – the safety of this branch of tourism. As reported by Reuters, the low-cost airline EasyJet cancelled nearly 270 flights in just one week of April 2022, and the high-end British Airways cancelled 662 flights (Sandle, 2022). It is very difficult to predict the future behaviour of the market, especially on a global scale. Thanks to noticeable historical changes and figures, European passenger air traffic in 2020 was comparable to that of 1995 (Rodrigues et al., 2021). In general, it is estimated that a complete return to the situation from before 2019 is not expected until 2024, unless other unforeseeable crises have occurred.

3. Material and Methodology


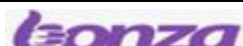

The aim of the paper is to indicate changes in strategy, financial, hygienic and service behaviour in relation to customers and aviation personnel. These changes are a response to the global COVID-19 pandemic. The paper uses the desk research method of analysis. The analysis of publicly available values from annual reports of selected low-cost airlines from six continents, i.e. Europe, Asia, North America, Australia, Africa and New Zealand, and the examples described in the work made it possible to establish facts, verify data and present results.

4. Low-budget Airlines

The analysis of the obtained data covers the situation during the pandemic and predicts the future of six low-cost¹ airlines representing individual regions of the world, such as: Europe, Asia, North America, Australia, Africa, New Zealand (Table 1).

Table 1.

List of low-cost airlines representing different regions of the world

World Region	Name of the airline	Airline logo
Europe	Ryanair	
Asia	AirAsia	
North America	Spirit Airlines	
Australia	Bonza	
Africa	Kulula	
New Zealand	Jet Star	

Source: author's own study.

Over 60% of the European airline market in the pre-pandemic period belonged to high-budget carriers, and 38% was represented by cheaper airlines.

Those low-cost European airlines which were not financially supported in any way by the governments of the countries where they are based were the first to make adjustments in size and salaries, which allowed them to reduce their fixed and variable cost base. For example, the Irish carrier Ryanair terminated employment contracts with three thousand people, which

¹ Low-budget transport - this term was adopted in accordance with the Glossary of terms adopted for the needs of the Transport Development Strategy in Poland (with a perspective until 2030). Low-cost carriers offer passenger air transport services at lower prices than traditional airlines.

accounted for 15% of the total workforce and ensured a significant reduction in structural costs and nearly 250 administrative positions in offices in Wrocław, London, Dublin and Madrid. Those who remained were offered salary cuts: pilots were offered a 20% reduction over 5 years and stewardesses and ground staff got an offer of up to 10% reduction. The airlines also negotiated with national governments to reduce taxes under the threat of closing the base, which brought short-term success in some locations. This creativity in reducing costs proved to be the right way out for Ryanair as the annual balance sheet showed a financial loss of €185 million for the period January-June 2020, rather than the expected €232 million (Bréchemier, Combe, 2021). Although this choice of a quick and aggressive financial policy was an interesting decision and seemed to work positively, especially in the initial phase of the "financial rescue", the revenue at the end of the year was still at the level of 79.2% and was much lower than that of the competition, i.e. 2.7% than WizzAir (total 76.5%), 24.7% than SAS (total 54.5%), 27.2% than EasyJet (total 52%) (Bréchemier, Combe, 2021).

Europe generally saw the total of 277 million air passengers in 2020, a decrease of 73% compared to the preceding year. Unfortunately, as research proves, all the EU Member States recorded large decreases. The largest decreases were observed in Slovenia (83%), Slovakia (82%), Croatia (82%) and Luxembourg (67%) (Eurostat, 2021).

In the longer term, low-cost airlines in Europe will open bases for a better network, in a "post-pandemic" reality, as they already account for 40% of the market and are rebuilding their market position faster and faster every day (Bréchemier, Combe, 2021).

AirAsia is a strong representative of Asian low-cost airlines based in Malaysia. The company gained recognition when it carried over 237 million passengers in 2012, making it the largest carrier in Southeast Asia. It has been operationally profitable since 2001, with a pre-pandemic net income of approximately \$354 million a year. The outbreak of the COVID-19 pandemic caused AirAsia's revenue to drop dramatically, down to \$188 million in the first quarter alone (Khadijah, 2021). The company also owns the hotel chain "TuneHotels", but this business too suffered huge losses over time pandemic. As AirAsia is a low-cost airline whose revenues come from transporting passengers who could not be transported during the epidemic, and the airport fees for nearly 100 Airbus A320 aircraft parked at the airport increased dramatically, the company decided to change the commercial licenses for 60% of its aircraft and transform itself into a cargo transport company (AnnualReport..., 2020). AirAsia made it a priority not to lay off its employees, so they were sent on forced leaves, provided with psychological care in the *Peer Support* programme, risks were assessed, and then a decision was made to take on a food delivery project. In April 2021, AirAsia Farm was launched, wherein cooperation was established with the Ministry of Agriculture and Food Industry (MAFI), the Department of Agriculture (DOA) and the Federal Agricultural Marketing Authority (FAMA) of the company Perlis. The main purpose of AirAsia Farm has been to transport crops, fruits, vegetables or seafood from Tawau, Sabah to Kuala Lumpur, while fishermen in Kuala Lumpur could not sail due to restrictions (which resulted from the fact that

there are usually more people on ships than in airplanes). Of course, the purpose of the Airbus A320 is to carry passengers. The partial rebranding during the crisis, along with the help of the government helped AirAsia to protect many of its employees, continue its strong position in the market and win the admiration of many customers.

According to the International Air Transport Association (IATA), the pandemic situation had a very negative impact on the entire Asian market and the Pacific region. An IATA analysis shows that as a result of the COVID-19 crisis, global airline passenger revenue in 2020 decreased by \$314 billion, which was a 55% decrease compared to the preceding year and translates into a \$88 billion decrease in revenue. Conrad Clifford, IATA's regional vice president for the Asia-Pacific region, asked in his address the governments of India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Sri Lanka and Thailand for direct financial support, loans, credit guarantees, corporate bond market support and tax breaks. He also emphasized that each airline job supports another 24 people in the travel and tourism value chain, especially in the Asia-Pacific regions (Annual Report..., 2020). The year 2020 threatened 11.2 million jobs and therefore all the governments of the countries asked in the message offered their help, to varying degrees. Sri Lanka offered the smallest support, but it was adequate to the country's financial capabilities.

Headquartered in Florida, Spirit Airlines is the eighth largest low-cost airline in the Northern United States. Although they offer on average 30% lower ticket prices than their competition, they still do not enjoy a good reputation among their customers. Typically rated 2.5 stars out of 5, with 30% of negative reviews describing the line as "terrible" and the "worst possible" (Renfro, 2018). In 2020, total operating costs were \$658.4 million, which represents a decrease of 22.1% compared to the pre-pandemic years (Spirit Airlines, 2021). Due to the COVID-19 pandemic, Spirit Airlines received \$334 million in government assistance in the form of grants and loans under the Coronavirus Relief and Economic Security Act (CARES) in the same year. The company stated on its official website that despite the pandemic it avoided forced leave for its employees in the US by offering voluntary leave programs and other initiatives to reduce costs (Spirit Airlines, 2021). On social media, the company boasted about its financial achievements during the crisis so much that two companies, Frontiers Airlines and JetBlue, made a proposal to buy Spirit in 2022 (Airbus, 2021) (in fact, the airline purchased one plane and boasted no lawsuits from dismissed employees, and, according to the official website of the company, those who left: "allegedly wanted to leave by themselves and by doing so they very much hurt the family atmosphere of the company") (Spirit Airlines, 2021).

The COVID-19 pandemic did not spare American airlines either. According to analyst estimates provided by FactSet, US carriers' net losses in 2020 exceeded \$35 billion. "The pandemic ended a decade of gains that the industry enjoyed until 2020 during which it hired tens of thousands of workers, bought new planes and expanded its networks. In 2020, airline shares fell the worst in years. American Airlines' share price fell by 45%, its largest percentage drop since the carrier's merger with US Airways in 2013. Delta Airlines

shares are down by 31%, while United Airlines is down by 51% in the past 12 months, which is its biggest drop since 2008. Southwest lost 14%. (...) The pandemic forced carriers to quickly reduce, shorten their routes and ground hundreds of jets. According to the Airlines for America trade group, US carriers increased their total debt by \$67 billion in 2020 to over \$172 billion to weather the crisis" (Josephs, 2021). The US government's aid to the aerospace industry was the world's largest recorded aid, amounting to \$80 trillion, which is comparable to all other countries combined and multiplied by four (Top 10 Changes..., 2021). The staggering aid did not, however, protect the aviation industry from huge debts anyway, and it can safely be concluded that it was the largest and longest crisis in the history of this branch of the economy.

Undoubtedly, the pandemic has had a negative impact on many airlines around the world, leading many of them to bankruptcy. However, there are airlines that want to face the pandemic challenge. Bonza is a new low-cost airline that delayed its launch in Australia by several months, but is still very positive about its 27 destination routes across Australia (Bolton, Easton, 2022). At the moment, the airline has four jets of the American manufacturer Boeing. Their number is expected to double by the end of the year, with an order for 30 additional aircraft already placed in March 2021 (Bolton, Easton, 2022).

Bonza originally planned to operate 37 flights a week from its home airport in Queensland, where 83% of the announced routes were completely new. The business model of these airlines was taken from the American Breeze airlines, which offered flights between cities not served by any other airline. Therefore, the new airline Bonza intends to operate 92% of the offered routes from Sunshine Coast, thus doing something that has not been offered by any other airline before. The new low-cost carrier was to have no competition in places such as Albury, Avalon, Bundaberg, Cairns, Coffs Harbour, Gladstone, Rockhampton, Port Macquire and Whitsunday Coast (Bonza..., 2022). The future will show whether modelling on the American equivalent will be reflected in the company's finances. As of today, the 2020 annual balance sheet shows that the American inspiration Breeze Airlines carried over 330,000 passengers in seven months, despite the ongoing SARS-CoV-2 coronavirus pandemic (Bonza..., 2022).

In general, the Australian market suffered the restrictions related to the pandemic, but mainly in an international sense. Air services were first shut down completely, then slowly reopened, but only to fully vaccinated passengers, which was seen by many as very radical, especially in Australian culture. As for the domestic flights market, it also saw a decline, but not as much as anywhere else in the world. For example, Qantas, one of Australia's largest carriers, had flights between Melbourne and Sydney 58 times a day before the pandemic, while during the pandemic this number fell to 37 times a day over Christmas (Virgin, 2022; Baird, 2021). From the above data, it can be concluded that the decrease in domestic flights in Australia did take place, but it was not that drastic. However, as regards ground service of Australian carriers operating in other countries, most of them were sent on forced leave which was paid (in most cases) only for the first 90 days (AirlineCompetition..., 2021). Unofficial

figures show that 80% of these workers returned to the country and worked in Australia after 3 months.

One of the most interesting low-cost airlines, primarily from the marketing point of view, is the South African Kulula based in Johannesburg. During its 20 years of operation, the airline had 10 aircraft covering six destinations in South Africa and as a British Airways franchise. Unfortunately, the pandemic, the forced suspension of flights, the partial layoff of the crew and having to rely only on the support of contract staff who were reluctant to fulfill their duties, no government support, outbreaks of riots in the country and constant political uncertainty pushed the company to be put up for sale. When this did not bring any success and no buyer was found within 24 hours from the broadcast of the advertisement, the company declared bankruptcy. The company's original marketing ranked the company third in terms of customer satisfaction. Unfortunately, a well-liked and safe airline had to close its operations, left without any support from a stable government.

The financial situation of low-cost airlines in South Africa is contained in the following figures: only four out of ten airlines of this type across the country survived on the market after the pandemic until June 2022. These companies were mainly supported by private investors or external funding sources (in the case of franchises) such as British government financial facilities guaranteed by the parent carrier – British Airways (SA Airlines..., 2022).

The low-cost airline² representing New Zealand is an Australian carrier JetStar, headquartered in Melbourne (Jetstar..., 2020), entirely owned by the Qantas Group. This airline carries 8.5% of all passengers travelling to and from Australia (Qantas..., 2022). It launched its New Zealand flights in December 2005, offering trans-Tasman services between Sydney and Christchurch. Now, 17 years later, it consists of 76 aircraft, offering over 200 domestic return flights a week between Auckland, Christchurch, Dunedin, Wellington and Queenstown (Jetstar..., 2020). As regards the COVID response to the business sphere, Jetstar suspended its operations in New Zealand on 15 August 2020, after the government introduced social distancing rules in response to the second outbreak in Auckland (Anthony, 2020). The company faced massive criticism after refusing to refund passengers whose flights were affected by cancellations, offering travel vouchers or date changes instead, a behaviour that was met with great cultural distaste (Lincoln, 2020). Just two months later, in mid-September 2022, Jetstar announced it was resuming domestic flights in New Zealand after the government lifted physical distancing requirements on planes. Since its post-pandemic return, Jetstar is operating at 110% schedule compared to March 2019. Financially, Jetstar is scheduled to operate more domestic flights in February and March than in any previous year, and travel demand exceeds the pre-COVID-19 levels (Lincoln, 2020).

² Low-budget flights - these are mainly short distance flights, in direct connections, where no business class, catering or additional services does not affect the passenger's decisions as to the choice of the carrier (Montwill, Drop, 2018), according to the managers of these airlines (e.g. Ryanair, easyJet, Wizzair).

In general, most New Zealand airlines suspended their flights, but only for two months and were able to recover all losses in a few post-pandemic months. No structural changes or annual financial declines have been recorded, so it may be concluded that a rich country which can afford to react quickly, even in the most critical situation, can well support various branches of tourism.

Summary

It is assumed that about 100 million jobs in aviation and broadly understood tourism were at risk due to the pandemic. Ground personnel, in-flight catering, airports, aircraft cleaning crews, aircraft mechanics and even trainers in training centres were all affected by the fact that a third of the world's air fleet was suddenly grounded. Government support for airlines cost the world \$100 trillion. According to the European Cockpit Association, around 18,000 pilots lost their jobs during the pandemic. In Europe, one in five pilots was fired, while the rest were offered 50% of their salary. During the pandemic, international travel fell by 64%, which negatively affected many industries, contributed to the loss of \$252 trillion in lost profit for airlines and \$111 trillion in lost profit for airports (Top 10 Changes..., 2021). Tourism constitutes 8% of the global GDP and in some countries it accounts for 20% of their annual revenue. The only part of aviation that has gained from the pandemic is the cargo domain, which accounted for only 13% of global aviation (passenger aircraft were mainly responsible for transporting global cargo) before the COVID-19 and grew to 30% of global transport (Top 10 Changes..., 2021). It was amazing that for many years, the cargo department was unprofitable for many world airlines and these companies often gave cargo up, but during the pandemic it became a kind of rescue for them. In addition, many airlines gave up buying new planes while their construction has already started. The situation of business travel has also changed – it was largely transferred to online platforms. They will probably remain in some part, but they will no longer account for such a large, 36%, impact on the global budget of airlines.

In conclusion, in this financially dramatic situation, several types of support for the aviation sector are recommended. The most important thing is to re-establish passenger confidence in air transport, which is essential for a resumption of demand. The best way to achieve this would be to ensure consistency in the implementation of public sanitation measures, ensuring effective communication with the consumer so that they always feel well and timely informed. It would also be advisable to introduce a global, uniform, internationally recognizable, digital COVID certificate (this issue is very diversified and certificates can be different even in such closely related countries as Germany and Austria) and many digital solutions from the moment of buying a ticket, through check-in, to baggage claim. In addition, access to COVID tests at airports should be quick and affordable.

The aviation industry should consider better pay packages for its employees, including contract staff, so that in inevitable crisis situations they are not forced to look for other employment. The offer of attractive salaries would also encourage others to join the industry, which would provide better air and ground service, reduce queues at airports and possibly have a positive impact on flight cancellations – something that today's passengers are mostly complaining about. According to Grace Hopper, an American IT pioneer, "a ship can stay in a port, but ships are not built to stay in ports" (Yale News, 2017). It can also be added that "parking in ports" is not cost-effective. Business Insider reports that "in the case of the most popular Boeing 737-800, the cost of standard airport parking in Warsaw is about €3,200 per month, and about €1,400 per month for storing one aircraft" (Walków, 2020). In times of crisis, the flight crew should be adequately financially secured, because without them, airplanes, even the most beautiful and modern ones, mean absolutely nothing. Due to the limitations of the research that results from the magnitude and non-standard nature of the described crisis, the focus on a specific market forces caution about the possibility of drawing general conclusions, because the events are still "fresh" and the insights that can be obtained at the moment reflect the impact that can still be described as short term. As data becomes available, further research may delve into the long-term effects of the crisis as well as the impact on various business models that the future will need to implement in its handling mechanism, not just crisis management.

References

1. Airbus (2020). *Spirit Airlines finalises order for 100 Airbus A320neo Family aircraft*. Available at: <https://www.airbus.com/en/newsroom/press-releases/2020-01-spirit-airlines-finalises-order-for-100-airbus-a320neo-family>, 29 September 2022.
2. Airbus (2021). *Orders and deliveries*. Available at: <https://www.airbus.com/en/products-services/commercial-aircraft/market/orders-and-deliveries>, 29 June 2022.
3. Airline Competition in Australia (2021). *Australian Competition and Competitor Commission*. Available at: <https://www.accc.gov.au/system/files/Airline%20competition%20in%20Australia%20-%20December%202021%20report.pdf>, 29 September 2022.
4. Annual Report 2020. *Capitala AirAsia*. Available at: <https://www.capitala.com/misc/FlippingBook/ar2020/>, 29 September 2022.
5. Anthony, J. (2020). *Coronavirus: All Qantas and Jetstar international flights suspended from late March*. Retrieved from: <https://www.stuff.co.nz/national/health/coronavirus/120403628/coronavirus-all-qantas-and-jetstar-international-flights-suspended-from-late-march>, 23 September 2022.

6. Baird, L. (2021). *Frequent flyers burn 7b points in a month*, *Financial Review*. Retrieved from: <https://www.afr.com/companies/transport/frequent-flyers-burn-7b-points-in-a-month-20211121-p59aom>, 23 October 2022.
7. Bolton, M., Easton, A. (2022). Fair Skies Ahead for New Budget Airline Bonza despite Industry Turbulence, Say Analysts. *ABC News*. Available at: www.abc.net.au/news/2022-02-20/bonza-budget-airline-cheap-tickets-regional-flights/100845278, 7 September 2022.
8. Bonza odkłada inaugurację z powodu opóźnień dostaw boeingów 737 MAX. *Rynek Lotniczy*. Available at: www.rynek-lotniczy.pl/wiadomosci/bonza-odklada-inauguracje-najesien-14563.html, 7 September 2022.
9. Bouwer, J., Krishnan, V., Saxon, S., Tufft, C. (2021). *Everything You Need to Know About ADHD*. *Healthline*. Retrieved from: [www.healthline.com/health/adhd#:~:text=Attention%20deficit%20hyperactivity%20disorder%20\(ADHD,and%20children%20can%20have%20ADHD](http://www.healthline.com/health/adhd#:~:text=Attention%20deficit%20hyperactivity%20disorder%20(ADHD,and%20children%20can%20have%20ADHD), 18 November 2022.
10. Bréchemier, D., Combe A. (2021). After Covid-19, Air Transportation in Europe: Time for Decision-Making. *Fondapol*. Available at: www.fondapol.org/en/study/after-covid-19-air-transportation-in-europe-time-for-decision-making-2, 18 November 2022.
11. COVID-19 Impact on Asia-Pacific Aviation Worsens (2020). *IATA.Org*, IATA. Available at: www.iata.org/en/pressroom/pr/2020-04-24-01, 4 September 2022.
12. Duszyński, J., Afelt, A., Ochab-Marcinek, A., Owczuk, R., Pyrc, K., Rosińska, M., Rychard, A., Smiatacz, T. (2020). *Zrozumieć COVID-19*. Warszawa: PAN.
13. Eurostat (2021). *Air Passenger Transport Decreased by 73% in 2020*. Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20211206-1>, 30 May 2022.
14. Independent (2022). *Schiphol Airport*. Available at: <https://www.independent.co.uk/topic/schiphol-airport>, 29 September 2022.
15. Jetstar (2020). *Jetstar's domestic flying in 2021 to exceed pre-COVID levels as travel demand for low fares travel rises*. Available at: <https://newsroom.jetstar.com/jetstars-domestic-flying-in-2021-to-exceed-pre-covid-levels--as-travel-demand-for-low-fares-travel-rises>, 29 May 2022.
16. Josephs, L. (2021). *U.S. Airlines' 2020 Losses Expected to Top \$35 Billion as Pandemic Threatens Another Difficult Year*. *CNBC*. Available at: <https://www.cnbc.com/2021/01/01/us-airline-2-losses-expected-to-top-35-billion-in-dismal-2020-from-pandemic.html>, 12 September 2022.
17. Khadijah Binti Shafie, S. (2021). How Covid-19 Affect AirAsia Concurrently Inspire Better Business Process Improvements. *Research Gate*. Retrieved from: www.researchgate.net/publication/355753315_How_Covid19_affect_AirAsia_concurrentlly_inspire_better_business_process_improvements, 14 September 2022.
18. Lincoln, T. (2020). No cash refund option for passengers impacted by Jetstar flight cancellations. *The New Zealand Herald*. Retrieved from: <https://www.nzherald.co.nz/nz/no-cash-refund-option-for-passengers-impacted-by-jetstar-flight-cancellations/UCJ2ZZOXC2SPFYQC7XTQIOLIGA/>, 12 November 2022.

19. Montwiłł, A., Drop, N. (2018). Analiza funkcjonowania niskobudżetowych pasażerskich przewoźników lotniczych w Europie jako przykład innowacji zarządzania. *Studia i Prace WNEiZ US, Nr 52/2*, DOI: 10.18276/SIP.2018.52/2-35.
20. Niedzielski, P. (2020). *Sektor Lotniczy w Erze Transformacji Społecznej i Technologicznej*. Warszawa: SGH.
21. *Qantas International's market share slips as capacity growth slows*. Retrieved from: <https://www.theaustralian.com.au>, 17 September 2022.
22. Renfro, K. (2018). I Finally Caved and Flew on the 'worst Airline in America' — Here's What It Was Like. *Business Insider*. Retrieved from: www.businessinsider.com/spirit-airlines-flight-review-food-photos-2018-6?IR=T#the-yelp-page-for-spirit-airlines-doesnt-paint-a-more-pleasant-picture-4, 9 November 2022.
23. Rodrigues, M., Sandri, E., Knezevic, L., Teoh, T. (2021). *Relaunching Transport and Tourism in the EU after COVID-19 – Part III Aviation Sector. Research4Committees*. Available at: <https://research4committees.blog/2021/08/24/relaunching-transport-and-tourism-in-the-eu-after-covid-19-part-iii-aviation-sector/>, 11 September 2022.
24. SA Airlines (2022). *New Low Cost Airlines in SA*. Retrieved from: www.sa-airlines.co.za/New-Low-Cost-AirlinesSA.html#:~:text=These%20are%20some%20of%20the,a%20division%20of%20British%20Airways, 15 May 2022.
25. Sandle, P. (2022). Hit by Staff Shortages, Airlines and Airports Struggle with Travel Recovery. *Reuters*. Available at: <https://www.reuters.com/world/europe/hit-by-staff-shortages-airlines-airports-struggle-with-travel-recovery-2022-04-05>, 29 September 2022.
26. Spirit Airlines (2021). Spirit Airlines Reports Fourth Quarter and Full Year 2020 Results. *GlobeNewswire*. Available at: www.globenewswire.com/news-release/2021/02/10/2173556/15631/en/Spirit-Airlines-Reports-Fourth-Quarter-and-Full-Year-2020-Results.html, 9 November 2022.
27. Top 10 Changes in the Airline Industry (Due to Pandemic) (2021). *YouTube*. Retrieved from: www.youtube.com/watch?v=CxZbekE2bhQ, 16 September 2022.
28. United Nations (2020). *Impact of the COVID-19, Pandemic on Trade and Development, Transitioning to a New Normal*. Geneva. Retrieved from: https://unctad.org/system/files/official-document/osg2020d1_en.pdf, 16 September 2022.
29. *Virgin Australia drop largest ever Velocity Promotion on millions of Rewards Seats*. Available at: <https://www.flystaypoints.com.au/virgin-australia-drops-largest-ever-velocity-promotion-on-millions-of-rewards-seats/>, 29 September 2022.
30. Walków, M. (2020). *Ile można zarobić na uziemionych samolotach? Lotnisko ma pomysł, jak załatać dziurę w kasie z powodu koronawirusa*. *Business Insider*. Available at: <https://businessinsider.com.pl/wiadomosci/parking-dla-samolotow-koszty-garazowania-floty-na-lotnisku-w-lodzi/grdbt3x>, 23 October 2022.
31. Yale News (2017). *Grace Murray Hopper (1906-1992). A Legacy of Innovation and Service*. Available at: <https://news.yale.edu/2017/02/10/grace-murray-hopper-1906-1992-legacy-innovation-and-service>, 13 November 2022.

THE IMPACT OF OPERATIONAL AND INNOVATIVE MANAGEMENT ON THE CREATION OF CORPORATE SOCIAL RESPONSIBILITY IN THE LOGISTICS INDUSTRY

Krzysztof PASEK

Jan Kochanowski University in Kielce; krzysztof.pasek@ujk.edu.pl, ORCID: 0000-0003-2960-5321

Purpose: The main goal of the article is to indicate the links between operational and innovative management in building corporate social responsibility in the logistics industry. The dependence of the links will indicate specific applications for logistics and production companies. Operational management and supply chain management are related to the functioning of the organization on the market. Producers produce physical goods that are used directly by consumers or by other companies. Transport companies provide services consisting in the movement of goods, design companies, use specialist knowledge to create products and even shape the image of companies. The common element is that each organization has an operational function. We can therefore say that the operational function is the set of people, technology and systems within an organization, the primary purpose of which is to deliver to customers its products or services.

Design/methodology/approach: Market analysis in Europe of companies from the logistics industry based on professional experience and numerous studies of the companies in question from the implemented CSR solutions.

Findings: The study confirmed that a turbulent environment has a direct impact on the management, functioning and financial performance of the company.

Originality/value: The article is addressed to dynamically developing companies in the logistics industry, which, despite the pandemic, war and rampant inflation, develop their business activities paying particular attention to corporate social responsibility. Another point to note is that most organizations operate as part of a longer supply chain. So the supply chain is a network of manufacturers and service providers that work together to process and movement of goods, from the raw material phase to the end user level. All these cooperating entities are linked by the flows of physical goods, the flows of information, and the flows of cash. In summary, supply chains combine the operational functions of many different organizations. The added value is the possible combination of operational and innovative management in logistics with corporate social responsibility.

Keywords: Operational management, innovation, corporate social responsibility.

Category of the paper: case studies.

1. Introduction

Organizations must carefully manage their operations and supply chains if they are to prosper and survive in the marketplace. In the traditional version it sees operations as a transformation process during which inputs are transformed into products, goods or services valued by the customer. The whole process is not a simple matter, as it includes activities that must be performed from the moment of obtaining the raw material to produce a finished product.

The operational function may also be the provision of intangible services, as in the case of consulting and logistics consultancy in the area of many fields, but also legal advice, consultancy in the field of employment and personnel management, etc. We cannot touch these services, but their role is often decisive in the efficient functioning of many companies. All companies of this type, using the skills and knowledge of their employees, transform the effort into valuable advice, thus satisfying the needs of customers. Expenditure on operations may come from many places and may have various forms, so they may be raw materials, intangible resources, demand forecasts, the so-called forecast's or information. It should be remembered that operations are often highly dependent on the quality and availability of inputs, and almost all operational activities require coordination with other functional departments of the company, including the innovation and design department, marketing and human resource management departments.

Performing operations management activities requires a large amount of information as well as making numerous - very important decisions. The managing head of operations must be able to guarantee that the plant will have people with appropriate qualifications and the right equipment, that the necessary materials will arrive on time, and the finished product that complies with the specification will be shipped to the customer on the agreed date and that the costs will not exceed the agreed level. Operations management is therefore "planning, scheduling and controlling activities that allow you to transform inputs into finished products and services" (Cox, 2002). Keep in mind that operations management decisions can be very different in nature, they can be fundamental long-term decisions (for example, the number of markets served in what models of a given product), but they can also concern ad hoc issues, such as determining the best way to fulfill the current order.

Reasonable planning and professional management of operations allows organizations to deliver the highest value to their clients while using their resources in the most efficient way possible. However, in order for operational management (operations) to constitute a specific whole with the management of the supply chain, attention should be paid to the elements connecting them. In the standard approach to operations management, there is still a lot of emphasis on the activities that a specific organization must perform when managing its own

operations, but is this sufficient for efficient integrated management? The answer is self-evident, it is not enough.

Not forgetting the importance of the operational function of the enterprise, focus only is too narrow a way of thinking on the appropriate internal activity of the company in line with the adopted procedures.

2. Benefits of corporate social responsibility in supply chains.

Managers of enterprises know very well that "self-sufficiency" is sufficient, but only up to a certain point in the functioning of the company, then it is necessary to realize the connections of the company with the operations of suppliers, distributors and customers, i.e. partners creating an integrated supply chain. So the organizations that make up the supply chain are connected by physical flows, information flows, and cash flows. All of these flows take place both up and down the supply chain, and companies that supply inputs to the company's operations rank at the top of the supply chain (e.g., a company that supplies different types of rubber to a tire-making company), and collecting products from the company in question and passing them on to final recipients are perceived as located downstream of the supply chain. The average consumer buying tires, which is very likely - does not think about the enormity of activities that precede the delivery of the product to it, what's more, when buying a car, it does not focus on where it was extracted, processed, and finally every part of it with the tire was manufactured. headed. Therefore, going further in our considerations, we can present another division, namely into first-order suppliers (in our case, let it be a supplier of rubber for the production of rubber, as we know, rubber is obtained mainly from tree resin), i.e. a first-order supplier there will be a resin supplier for rubber production, a second-tier supplier will be a rubber supplier, and another supplier will be the supplier of "our" rubber for the production of tires. Along with the purely physical links between suppliers, attention should be paid to the exchange of information, which starts the production process of the next batch of tires. So after the signal for the demand for rubber, subsequent partners order their components so as to smoothly satisfy all participants of the chain, so that the cooperation can be optimized, it is possible to replace the pallets or containers for transporting their components during the next delivery, so the cooperation within the chain begins to stagger more and more. larger vertebrae (Bozarth, Handfield, 2007).

If you look at the entirety of the presented example, one can get the impression that all operations within the supply chain have always been performed, and indeed have been, and in the past most organizations performed their activities independently of other partners in the chain, which could result in only chains functioning with a high percentage of randomness, untimely and chaos, misunderstandings and ineffectiveness. To sum up, supply chain

management is an active management of activities performed within the supply chain and relations between its individual links in order to maximize the value for the customer and achieve a sustainable competitive advantage. These are the conscious efforts of a company or group of companies to build and operate supply chains in the most effective and efficient way possible (Bozarth, Handfield, 2007).

One of the earliest advocates of supply chain management was Wal-Mart (Bozarth, Handfield, 2007).

Its activities at the turn of the eighties and nineties were very revolutionary. Individual stores sent sales information to the network's suppliers on a daily basis via satellite. Suppliers used this information to plan production and ship deliveries to Wal-Mart's warehouses. The supermarket chain used a dedicated fleet of trucks to move goods from warehouses to stores in less than 48 hours and replenish store supplies roughly twice a week. The result was better customer service (as all products were almost always available), lower production and transportation costs (suppliers produced and delivered only what was needed) and better use of store space (stores did not have to maintain excessive inventory). Wal-Mart continues to be successful thanks to its excellent logistics and procurement organization (two key areas of supply chain management), and many of the practices that have spawned within the company have become entrenched in the business world for good.

„Supply Chain Management Example” proves how widespread thinking in terms of supply chain management has become. Efforts related to supply chain management can be undertaken by both individual companies trying to improve the exchange of information with partners in the supply chain, and large organizations looking for ways to standardize transport, warehouse and accounting procedures – operational. In the case of Wal-Mart, a single one, a very powerful company has taken responsibility for improving the efficiency of the entire supply chain.

An alternative is the often practiced appointment by companies operating in a given industry of teams or groups to identify such procedures in the supply chain that can benefit all entities in the sector. One such group is the Automotive Industry Action Group (AIAG, <http://www.aiag.org>). Among other things, its mission is "to provide an open forum where all members of the group can work together to develop and promote solutions that enhance the prosperity of the automotive industry." An association called Grocery Manufacturers of America (GMA, www.gma.com) performs a similar function, and organizations such as the Supply-Chain Council (SCC, www.supply-chain.org) strive to improve supply chain efficiency in many industries.

Operations management and chain management are a combination of certain philosophies of approach to business, sets of tools and techniques, therefore they require extensive cooperation and a high level of trust between companies, hence we can conclude that the role of values that can be obtained by implementing an integrated supply chain is dominant. On this occasion, attention is focused on three important phenomena, thanks to which the

management of operations and the supply chain became the driving force, which are: e-commerce, increasing competition and globalization, relationship management.

E-commerce, and all the related methods, indicate that the crux of it is the proper use of information technology to automate business transactions. E-commerce itself contains the idea of increasing speed and improving the quality of business communication and reducing its costs. The rapid development of new, highly innovative telecommunications and information technologies has resulted in that instant communication has become a reality. Modern systems connect suppliers, manufacturers, distributors, retail stores and customers regardless of their location in the world.

If we take into account the growing competition and globalization, it is impossible not to notice the increasing pace of changes taking place on the markets in the field of products, as well as in the field of innovation and new technologies, the level of which is growing even faster. As a result, business managers need to make “quick” but right decisions with less information and higher costs if they make a mistake. Customers demand faster deliveries, the best technology, and products and services that are better suited to their individual needs, which is why it is often said that customer solutions within an integrated supply chain are “tailor-made”. At the same time, new competitors are emerging in markets traditionally dominated by local firms. However, despite so many adversities, a large group of companies thrive, coping with market fluctuations by focusing primarily on the efficiency of their operations and supply chains. It can be said that increasing competition and globalization have allowed many companies to become leading players on the market.

About relationship management, it is one of the most difficult tasks, making it the most susceptible to failure. A weak relationship between any two links in the supply chain can have catastrophic consequences for all its other participants. To avoid these problems, organizations need to manage relationships with their suppliers at the top of the supply chain as well as with customers at the bottom of the supply chain. In many sectors of the US and Japanese economies, strong supply chain relationships cannot be educated right away, due to the distance too far, the lack of small family businesses, and entities operating in the modern technology industry can buy many of the components they need only from foreign suppliers who own patented technologies. In such conditions, it becomes more and more important to choose a few carefully selected suppliers, which opens the way to informal cooperation and information exchange (Bozarth, Handfield, 2007). One thing is for sure, each organization must find its place in the market, to do it in the most effective way, by providing the required value to its customers, it should invest in the development of its operations and optimization of the supply chain.

Presenting the management of operations or the supply chain without characterizing the types of strategies does not fully reflect the idea of conveying value to customers. Therefore, in order for this discussion to be complete, I will present below the elements that affect the possibilities and scope of their application. Each company has elements that make up its entirety. We can divide them into two groups: structural and infrastructural elements.

Therefore, the structural elements include: buildings, equipment and computer systems, and the collection of these resources usually involves the need to make large, often irreversible investments. On the other hand, the infrastructural elements are people, politics, procedures, decision-making rules, as well as the choices made by the company regarding the organizational structure and scope of duties. These elements, although less visible, but equally important - just add that one of the key concepts of this element is total quality management (TQM).

According to TQM, the entire organization should be managed in such a way as to excel in all quality dimensions important for customers, giving them the value they expect. Organizations that adopt TQM as one of their infrastructure components will make completely different decisions than companies that refuse to do so. All elements of a given company must be compatible, which is why their cooperation is necessary for the company to be able to compete effectively on the market. Because acquiring, acquiring or producing some of them may be time-consuming and cost a lot, companies must be sure that their decisions are correct and consistent, therefore every company needs a strategy.

Thus, strategy is a mechanism by which companies coordinate their decisions regarding structural and infrastructural elements, i.e. a kind of long-term plan - a vision which the company is striving for. Most organizations have more than one level of strategy, ranging from higher-tier strategies to more detailed strategies. The operations and supply chain business strategy must:

- unequivocally identify the company's target customers and indicate the tasks of operational functions and the supply chain, the implementation of which will provide value to customers,
- set a timeframe and performance targets that managers can use to track the company's progress in implementing the business strategy,
- identify key competences in the areas of operations and supply chain and support their development.

Another functional strategy that translates a business strategy into specific actions in functional areas such as marketing, human resources, finance, operations and supply chain.

Overall, an Operations and Supply Chain Strategy is a functional strategy that indicates how the operational and supply chain structural and infrastructure components will be acquired and refined to support the implementation of the overall business strategy. The point is, implementing an effective operations and supply chain strategy means selecting and implementing the right combination of structural and infrastructure components.

Which combination of these elements is best is the subject of constant debate by practitioners and scientists alike. However, there are three main goals for an operations and supply chain strategy (Bozarth, Handfield, 2007):

- assisting management in choosing the right combination of structural elements and infrastructure based on a clear understanding of the dimensions of performance valued by customers and the necessary compromises,

- ensuring strategic coordination of structural and infrastructure decisions with the company's business strategy,
- supporting the development of key competences in the area of operations and the company's supply chain.

So how do you accurately determine the value for the customer within the operation and supply chain? Many customers evaluate products and services based on numerous performance dimensions such as performance, delivery time, after-sales service, and cost. The organization that provides the best combination of these elements will be seen as delivering the highest value. Continuing, it can be said that operations and supply chains can have a tremendous impact on a company's performance, whereby the four overall dimensions of performance are of particular importance, namely: - quality - time - flexibility - cost.

Quality is defined as a set of characteristics of a product or service that affect its ability to meet explicit or hidden needs. This concept is very broad, it includes, among others, performance (basic operational characteristics of a product or service), compliance (product or service conforming to the specification) and reliability (product runtime without breakage and maintenance, consistent performance of service unit tasks).

Another dimension is time, which in itself embodies two basic qualities: speed and reliability. Delivery speed generally determines how quickly an operational function or supply chain can meet a need once it has been identified. Delivery reliability means the ability to deliver products or services on an agreed date. Typical measures of delivery reliability include the proportion of deliveries that are delivered on time and the average delay in late deliveries. Delivery reliability is especially important for companies that are connected to each other in the supply chain. Another measure of delivery reliability is the correctness of the quantity sent, i.e. exactly the quantity that the customer ordered in the period of interest.

When it comes to flexibility, many operations and supply chains compete to respond to the unique needs of their customers, both in the production and service processes. Within flexibility, several types can be distinguished, such as: product flexibility (the ability to produce many different products or provide various services), flexibility in relation to changes (the ability to deliver new products with the shortest possible delay) and quantitative flexibility (the ability to produce any quantity of the product requested by the customer).

The final dimension of performance is cost, which covers such a wide range of activities that companies typically classify costs to be able to concentrate their management activities. Common cost categories include salary costs, material costs, design costs, quality maintenance costs, evaluation costs, and costs to prevent unforeseen events. There are many more categories of costs, but which one we will use will be strictly adapted to the customer service and requirements.

The primary goal of any organization is to develop an operations and supply chain strategy that will support its business strategy. Business managers should be able to identify how each operation and supply chain decision will affect customer order fulfillment and what difficult

choices to make in making those decisions. Nevertheless, as Bob Hayes and Steven Wheelwright stated over twenty years ago (Hayes, 1984), some organizations are better at achieving this goal than others. They described the four levels of coordination, and although initially related to production, today they are also used in the areas of operations and the supply chain:

1. **Internal neutrality.** At this stage, management is only looking to minimize any negative potential in the area of operations and supply chain. No further efforts are made to link these areas to the business strategy.
2. **External neutrality.** Industry proven practices are applied here, based on the assumption that what works for competitors will also work for us. However, there is still no effort to link the operational and supply chain areas to the overall business strategy.
3. **Internal support.** At this stage, the operational and supply chain areas participate in the strategic debate. Management recognizes that the structural and infrastructure components of the operations and supply chain must be aligned with the business strategy.
4. **External support.** Here, the areas of operations and the supply chain support the business strategy, and the business strategy is actively looking for opportunities to exploit the key competences found in these areas.

The operational and supply chain areas are important value creators in any organization. To ensure that managers make sound decisions about operations and supply chain, firms must first develop strategies for these functions linked to their overall business strategy, showing how firms can use their core competencies acquired in these areas to deliver these functions. value for the client, and even enrich your offer with above-average - added value.

Business Process Improvement is at the heart of Operations and Supply Chain Management as, first, the performance of most processes tends to decline over time, second, competitive pressures, and third, increasing customer demands. Therefore, what a few years ago could have been satisfactory for the client, may not meet his requirements today. So in order to be able to effectively manage and improve business processes, companies must first understand these processes perfectly. One of the cognitive methods is the development of graphic diagrams of organizational relationships or activities that make up the business process. This procedure is referred to as mapping, and properly performed mapping primarily serves several purposes:

- allows you to thoroughly understand the elements of the process - activities, results and performers of individual steps,
- defines the limits of the process,
- serves as a benchmark against which the effects of process improvement activities can be measured (Pasek, 2013).

The following procedure is often used in process mapping:

- identifying the main participants in the process using the technique known as relationship mapping,
- creating a detailed process map presenting all activities that make up the process.

The relationship map is an advanced diagram showing the most important organizational units involved in the business process and their interrelationships in the form of material, information and cash flows. Relationship mapping is most useful when participants are trying to define the scope of the process as well as identify who needs to be involved in further mapping and improvement (Heyes, 1984). For example, suppose a manufacturer wants to better understand how customer orders are processed. The first step will be to develop a relationship map to identify the people, functional areas, and even external organizations involved in the process. It should be remembered that the relationship map is not intended to identify all the details of the process, the purpose is to define general patterns of flows between participants, which allows to minimize the time of drawing up a relationship map.

The process map identifies specific activities that make up the material, information and money flows within the process - the created diagram gives a complete picture of how the process works. To increase the efficiency of any business process, we must have objective information about its current performance. We therefore need to look at how the lead time and the quality of the results are currently shaping up.

Just like solutions in the supply chain, the number and type of measures should be created "tailored to the customer", that is, give him the value that the process expects to be as efficient as possible. Most measures are derived from the four basic dimensions (Bozarth, Handfield, 2007):

- quality, which can be further subdivided into performance, compatibility and reliability,
- cost, including categories such as labor costs, material costs and costs related to maintaining quality,
- time, including dimensions such as speed and reliability of delivery,
- flexibility, including flexibility in terms of assortment, quantity and flexibility with regard to changes.

In summary, most companies find that it is good to start with processes inside the organization to move to activities and involve external partners in the supply chain, which is crucial because great opportunities for improvement often lie at the interface between different organizations, and taking it means increasing the possibility of introducing improvements, thus increasing the possibilities of optimizing the portfolio of our business partners. Currently available tools and methods for dealing with business processes indicate the importance of processes and their impact on the efficiency of operations and the supply chain. All the above-mentioned aspects give a clear signal to action, indicating the advantage of solutions used in the logistics chain on the B2B market.

How does this relate to corporate social responsibility?

The sources of corporate social responsibility can be found in the philosophical idea of responsibility. It assumes that the consequence of assigning freedom to man is imposing responsibility on him (Filek, 2002). It is recognized that "authentic freedom is aware of its limits" (Jaspers, 1965). If this philosophical assumption is transferred to the ground of economic relations, it should be recognized that an entrepreneur who enjoys economic freedom is also obliged to be responsible (Filek, 2006).

The opening of the economy to ethics influenced changes in economic practice and changed the perception of entrepreneurs only in terms of the amount of profit they create. This profit should be seen in the context of compliance with ethical principles by the entrepreneur (Polańska, 1997). In this sense, the development of the science of business ethics can be seen as a starting point for a discussion on corporate social responsibility. However, the need to take into account ethical elements in running a business was noticed much earlier.

Corporate social responsibility is also to result in many positive obligations regarding the transparency of economic activity, taking into account the interests of the natural environment, increasing the wealth of regions in which the economic activity of a given entrepreneur is concentrated, or even influencing the policy of countries and other entrepreneurs in the field of their social policy (Backer, 2006). At the same time, it is emphasized that the fact that managers have obligations with regard to the company's shareholders does not mean that they are not responsible for the social environment of the entrepreneur. This society, which gives entrepreneurs legal status and gives back natural resources, enables their functioning. Society does this not to enable a limited number of people to enrich themselves, but to process natural goods and manage human resources in a way understood today as the most optimal, i.e. through free-market economic activity (Lewicka-Strzałecka, 2006).

The contemporary understanding of Corporate Social Responsibility (CSR) is understood as a management strategy, according to which companies voluntarily take into account social interests, environmental aspects or relations with various groups of stakeholders, in particular with employees. Being socially responsible means investing in human resources, in environmental protection, relations with the company's environment and informing about these activities, which contributes to an increase in the company's competitiveness and shaping conditions for sustainable social and economic development.

On 28th of October 2010, the International Organization for Standardization (ISO), after more than 5 years of work in a group of experts from 99 countries, published the ISO 26000 standard. This standard is designed to organize the knowledge of corporate social responsibility (CSR - Corporate Social Responsibility). ISO 26000 is not a certification. It is, however, a practical guide to the principles of responsible business, and includes guidelines for all types of organizations (not only for enterprises), regardless of their size or location. The ISO 26000 standard distinguishes the following areas of corporate social responsibility: (1) organizational governance, (2) human rights, (3) labor relations, (4) environment, (5) fair market practices,

(6) relations with consumers, (7) social commitment (<https://www.parp.gov.pl/csr#csr>). Each company individually decides which tools of corporate social responsibility to choose. The most common ones are those aimed at the local community - projects for the environment in which the enterprise operates. They take the form of: activities consisting in supporting local institutions and people, cooperation with local organizations, programs for children and youth, ecological activities, as well as investment activities (e.g. road building) (<https://www.parp.gov.pl/csr#csr>), also pro-ecological activities aimed at environmental protection, investments minimizing the impact on the environment. These include initiatives such as the implementation of environmental policy, sustainable management of raw materials, waste segregation, environmental education of employees and customers, as well as the implementation of ecological technological processes and ecological products and services, as well as social campaigns - they enable enterprises to influence the attitudes of society through the media. Such campaigns are aimed at helping those in need (e.g. transferring some of the profits from the sale of a specific product to social purposes or pro-environmental activities) or increasing social awareness on a specific topic (e.g. environmental protection, consumer education). The theme of the action should be related with the activities of the enterprise. By the way, numerous programs for employees should also be mentioned - investments in employee development through programs improving employee qualifications (courses, training), integration programs, programs for equalizing opportunities (flexible forms of employment, equal opportunities for people over 45, people with disabilities), also within CSR, management systems are implemented - introducing transparent and effective management systems, i.e. Quality Management System ISO 9000 (quality management system), Environmental Management System ISO 14000 (environmental management system), Social Accountability SA 8000 (social responsibility management) and, above all, all Supply chain management - applying the principles of corporate social responsibility at every stage of deliveries, implementing standards for contractors (<https://www.parp.gov.pl/csr#csr>).

The research of the Institute of Democracy and Private Enterprise Research shows that companies applying CSR principles benefit from the following numerous advantages compared to other enterprises:

1. Economic benefits: have higher current liquidity; make better use of fixed assets and human capital; have a higher return on sales; they invest more per 1 employee;
2. Benefits of the social environment: increasing the level of culture and work safety; reducing the negative impact of enterprises on the environment; achievement of social goals impossible to achieve without business support;
3. Environmental Benefits: Best Practice for SMEs; rational management of natural resources and waste; engaging business partners in the chain of environmental responsibility and initiating joint pro-ecological activities; popularizing pro-ecological ideas;

4. Benefits for employees: timely payment of remuneration; high work culture and safety; constant professional development thanks to the availability of training; additional medical care; high-quality social facilities; equal opportunities for men and women in terms of positions and remuneration.

5. Practical solutions combining innovation with corporate social responsibility

Below are some examples of companies in which an innovative approach to the development of their own business closely harmonizes with corporate social responsibility.

The first is the Swedish company IKEA, which, as it says, wants to have a positive impact on people and the environment. For many years, he has focused on saving resources and creating a better everyday life for many people. In 2014, the IKEA Group made significant progress in all three areas defined in the People & Planet Positive strategy, which are: acting for a more sustainable life at home, achieving energy independence and the highest efficiency of using all natural resources, and caring for people's living and working conditions. globally. Each of us, in his place of residence or another where he stays, can undertake smaller and larger pro-ecological activities and behaviors, which together form one large whole positively influencing the environment. Minimizing waste, saving water and energy, growing plants and vegetables on the balcony - these are just some of the areas where we see the need for individual involvement of each of us. Adequate education, by inspiring a positive example and deepening interesting and significant topics that aim to protect the environment and social responsibility in the long term, is an important task for business. At IKEA, as they write, we start with ourselves, and we share what we can with customers, other companies, and with everyone who wants to listen and talk ([https://odpowiedzialnybiznes.pl/...](https://odpowiedzialnybiznes.pl/)). IKEA has ambitious plans until 2030. It is committed to tackling climate change, unsustainable consumption and social inequalities. The three main areas are healthy and sustainable living, circular economy, positive climate impact and fair and equal treatment. Additional values implemented by IKEA are: ensuring and supporting decent, worthwhile work along the entire IKEA value chain, promoting equality and supporting openness, as well as increased energy efficiency by 35% due to the implementation of new SOLHETTA LED bulbs, which are much more energy-saving and affordable than previous IKEA LED bulbs. Another significant change is to be the global approach to supplying IKEA factories only with electricity from renewable sources, and so in fiscal 2021 IKEA used 100% electricity from renewable sources to power all factories and packaging and distribution departments around the world ([https://www.ikea.com/...](https://www.ikea.com/)), another action is directed towards renewable materials for production, which already account for 55.8% of materials obtained in 2021, and 17.3% of materials were recycled. There are many

of these activities on the part of the Swedish company, and finally I would like to mention the example of wood management, which IKEA is famous for, and 99.5% of wood in IKEA is certified by the Responsible Forest Management Council (FSC) or is recycled.

Another company that fits into the CSR trend is certainly VIVE, which brings together several companies in its portfolio to form the VIVE Group. VIVE Textile Recycling, which has been operating for 30 years, aims to use 100% of used clothes, sorted every day in the amount of hundreds of tons, using the most modern in Poland, fully computerized lines for sorting clothes, enabling the processing of over 300 tons of raw material per day while maintaining the highest standards quality ISO 9001 and 14001. Every day, the staff sorts and packs finished products from over 800 different assortment groups. The products prepared in this way go to over 70 countries around the world and to the VIVE Profit chain of stores with unique second-hand clothing, all over Poland, of which VIVE Textile Recycling is the owner. Thanks to the optimization of costs incurred by the company and the use of innovative recycling methods, VIVE Textile Recycling, together with the VIVE Innovation company, has created an innovative textile composite VIVE Texcellence, applicable in industry. In addition, the company produces industrial cleaning cloths used by enterprises from many industries. VIVE Textile Recycling also develops its activities in the areas of transport and logistics, offering its customers a wide range of TSL services and A/A+ class warehouse solutions. It also specializes in the transport of bulky and standard cargo, high-volume swap bodies of the BDF system (the most in Poland). It carries out transports on the international market, offering a distribution system to commercial networks using its own dedicated fleet. VIVE - as a socially responsible company: as a socially responsible entrepreneur, the company supports the activities of the VIVE Women's Association and in practice raises awareness about the Closed Circulation Economy.

VIVE Textile Recycling constantly proves that the recycling possibilities are endless.

VIVE Group pursues a policy of sustainable development, wishing to meet the social and environmental challenges that the current world poses to all business and public entities. VIVE Group treats its commitment to sustainable development extremely seriously, as a recycling leader, committed to taking actions for the environment, our employees, local communities and market education. As a company, they make every effort to achieve the company's long-term success not only through innovative products and services, but also through responsible treatment of the environment in which we operate. VIVE implements sustainable development practices in a variety of forms, primarily emphasizing ecological aspects (textile recycling included in the Group's DNA), support for the local community (active building awareness of the circular economy) and multi-dimensional B2C education (addressed to children, youth, adults) and B2B (customers, business partners, current and potential contractors). Another way of social responsibility in business is sport and everything that happens around the Łomża Industria Kielce club, including the organization of the Small Handball League. MLP is a tournament that appeared on the map of the Świętokrzyskie

Voivodeship in 2004. The main goal of the competition is to promote a healthy, sporty lifestyle by promoting handball among children and adolescents. Professional organization of the competition shows young people that they are participating in a great sporting event in which they play the most important role. Preparations for the games themselves are held at a high level. Hence, the players of KS Łomża Industria Kielce join the training. The tournament enjoys the support of Sławomir Szmal, a Polish handball player, who plays as a goalkeeper. Sławek is a friend of the VIVE Heart for Children Foundation and, as a player of the PGE VIVE Kielce team, the best candidate for the coach of young cadres ([https://www.vivetextilerecycling.pl/...](https://www.vivetextilerecycling.pl/)).

Another company that actively combines its innovative, operational and production activities is ZPUE S.A. The company has been creating advanced solutions for the power industry for over thirty years. ZPUE S.A. devices can be found in many places in Poland and the European Union. The company is also present in many remote parts of the world. In all locations, he takes care of the security of supply and electricity recipients, e.g. in the harsh Andean climate of Chile, the paradise Caribbean, equatorial Africa, frosty Scandinavia, exotic south-eastern parts of Asia and In Australia. But that's not all ... The foundation of ZPUE S.A. from Włoszczowa, the origins of which date back to 1988, are innovations. Breakthrough solutions were created at the beginning in the garage of the founder, Bogusław Wypychewicz. The space limitations did not constitute a barrier to the implementation of new, bold ideas. It is thanks to them that the company rose above the mediocrity of the then Polish economy, setting new standards for the energy sector. The company takes part in the great technological revolution that has taken place in Polish and world energy. It is a reason to be proud and a huge commitment!

Following the path of innovation, the company does not forget about the quality and durability of its products, we are constantly gaining the trust of new customers in the country and around the world. Aware of the challenges, they do not intend, as they write, to stop in one place (<https://zpue.pl/csr>).

From among the seventeen Sustainable Development Goals adopted by all UN countries until 2030, the ZPUE company chose six that the joint pursuit of achieving them will improve living and working conditions in the world:

1. Ethics and transparency and the implemented Code of Conduct for Suppliers, which appears as a set of minimum requirements for suppliers of goods, services or benefits within the supply chain, in the field of compliance with the law, values and principles of social responsibility. As part of the Supplier Code, the company has taken into account the principle that the supplier conducts its business in an honest and ethical manner. Does not use any form of corruption or bribery, whether in dealing with government officials, public officials, clients or business partners.

2. Trust and cooperation. For the sake of transparency of activities and transparency of the activities of ZPUE S.A. conducts a multifaceted dialogue both with the external environment and within the organization. At the same time, it uses many available tools, both traditional and using the latest ICT achievements.
3. Climate and environment. All employees associated with ZPUE S.A. always and under all conditions act in a responsible manner for quality and the environment in order to increase customer satisfaction and to ensure the improvement of the effect of environmental activities, as well as to avoid environmental pollution and continuously reduce the negative impact on the environment.

The company's environmental goals are based on the principles of sustainable development by:

- A systemic approach to quality and the environment, including continuous improvement of the Integrated Management System and methods of proceeding within the processes necessary for the implementation of our clients' orders. This activity is closely related to compliance with legal regulations on environmental protection.
 - Permanent elimination of threats to the natural environment.
 - Systematic training of all employees and persons acting on behalf of and for ZPUE S.A. in terms of the basics and methods of quality and environment management and motivating employees to achieve quality and environmental goals.
4. Customers and Suppliers. The principles of ZPUE towards a responsible supply chain are: 1. Selection of the supplier; 2. Fair cooperation; 3. Joint projects.

The company ZPUE S.A. constantly modifies the supply chain and implements the purchasing strategy in relation to materials selected as potentially problematic:

- are looking for an alternative source of supply,
- by replacing the problem material with a standard one with high availability, a supplier's deposit warehouse was created,
- provide the supplier with the purchase forecast.

The Purchasing Platform ensures full transparency of purchasing procedures. In the near future, the condition for participation in procurement procedures and auctions announced on the Purchasing Platform will be the acceptance of the general terms of purchase along with the Code of Ethics.

5. Employees. The company focuses on a friendly HR and family-friendly policy. A policy that creates opportunities for personal development, integrates and gives a sense of satisfaction from the work performed, safety and stabilization.
6. Society - Foundation "We are Close".

Economic success goes hand in hand with social commitment, as evidenced by numerous projects, actions and activities for the local community. The company invests in the development of children and youth, and fights poverty and social exclusion. Their social ties are built, among others, thanks to the Foundation "We Are Close".

„We want to be closer to do more”.

My husband and I established the "We Are Close" Foundation out of the need of the heart and the need of the moment. The impulse for action was my sudden illness, devastating diagnosis and winning the fight for life. Then I realized that without the support of others, I would not have been able to go through it all. That is why I decided to help - first of all, our employees and their families, and with time all those in need in our region. This is how our Foundation was established, which today is a haven for anyone who finds themselves in a difficult life situation” (<https://zpue.pl/csr>).

It is impossible not to mention the cooperation of ZPUE S.A. with universities, such as: AGH University of Science and Technology Stanisław Staszic in Kraków, Kielce University of Technology, Silesian University of Technology in Gliwice, donating the company's equipment to the laboratory, sponsoring student projects, participating in expert lectures, sharing his experience with students.

6. Summary and conclusions

Enterprises operate in a certain environment and their decisions influence how it is shaped. Corporate social responsibility is a concept that assumes that companies take into account social interests in their activities. First of all, corporate social responsibility means mutual benefits. Not only the society gains, but also the company. The idea that guided the creators of CSR assumptions was that companies should operate not only on the basis of free market principles, but also be guided by their actions to have a positive impact on the society in many aspects. At the beginning of this article, I presented the benefits of corporate social responsibility both in terms of enterprises, employees and the local community. There is no doubt that appropriate operational management or management supported by the innovation factor has a huge impact on the standard of living of the local community, the willingness to work in a company investing not only in modern technologies but, above all, in the values so much needed by every person to function without fears for tomorrow. This kind of symbiosis causes the generation of invaluable values in mutual relations, i.e. the willingness to share experience with the possibility of learning, transparency of cooperation with the loyalty of employees, willingness to develop with investment in human potential as well as investment in modern technologies. So if everyone benefits from it, why the still low awareness of companies in Poland and Europe does not allow many entrepreneurs to "invest" in Corporate Social Responsibility”?

References

1. Backer, L.C. (2006). Multinational corporations, transnational law: the United Nations' norms on the responsibilities of transnational corporations as a harbinger of Corporate Social Responsibility in international law. *Columbia Human Rights Law Review*, vol. 37, no. 287, p. 5.
2. Bozarth, C., Handfield, R.B. (2007). *Wprowadzenie do zarządzania operacjami i łańcuchem dostaw*. One Press, Helion, pp. 33-35, 55-57.
3. Cox, J.F., Blackstone, J.H. (ed.) (2002). *APICS Dictionary*. Falls Church, Virginia: APICS, pp. 101-105.
4. Dietl, J., Gasparski, W. (1997) *Etyka biznesu*. Warszawa: PWN, p. 317.
5. Filek, J. (2002). *O wolności i odpowiedzialności podmiotu gospodarczego*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie, pp. 158-159.
6. Filek, J. (2006). *Společna odpowiedzialność biznesu. Tylko moda czy nowy model prowadzenia działalności gospodarczej*. Warszawa: Urząd Ochrony Konkurencji i Konsumentów, pp. 6-7.
7. Gasparski, W. (1997). *Etyka biznesu*. Warszawa: PWN.
8. Heyes, R., Wheelwright, S. (1984). *Restoring Our Competitive Edge*. New York: John Wiley, pp. 301, 305.
9. <https://odpowiedzialnybiznes.pl/targicsr/targicsr2016/ikea/>.
10. <https://www.ikea.com/pl/pl/this-is-ikea/climate-environment/strategia-zrownowazonego-rozwoju-ikea-pubfea4c210>.
11. <https://www.money.pl/gospodarka/spoleczna-odpowiedzialnosc-biznesu-czyli-csr-w-praktyce-6773355945597536a.html>.
12. <https://www.parp.gov.pl/csr#csr>.
13. <https://www.vivetextilerecycling.pl/polityka-csr/>.
14. <https://zpue.pl/csr>.
15. Jaspers, K. (1965). Wolność i komunikacja. In: L. Kołakowski, K. Pomian (eds.), *Filozofia egzystencjalna* (p. 186). Warszawa: PWN.
16. Lewicka-Strzałecka, A. (2006). *Odpowiedzialność moralna w życiu gospodarczym*. Warszawa: IFiS PAN, p. 18.
17. Pasek, K. (2013). *Wpływ innowacyjności w sektorze B2B na zarządzanie procesami logistycznymi*. Praca doktorska. Łódź: Uniwersytet Łódzki, Wydział Zarządzania, pp. 45-56.
18. Polańska, A. (1992). Zasady podziału dochodów z pracy w świetle etyki i ekonomii.
19. Stalk, G., Evans, P., Shulman, L.E. (1990). Copmeting on Capabilities: The New Rules of Corporate Strategy. *Harvard Business Review*, vol. 70, no. 2, pp. 57-69.

CITY TOURISM APPLICATION FUNCTIONALITY FROM THE PERSPECTIVE OF TOURIST EXPERIENCE AND TECHNOLOGY ACCEPTANCE MODELS

Katarzyna PAWLAK

Military University of Technology, Warsaw; katarzyna.pawlak@wat.edu.pl, ORCID: 0000-0002-1781-1059

Purpose: The purpose of the article is to identify the city tourism app functions affecting the process of users' technology adoption. The article presents the issues related to tourism apps and the role thereof in building tourist experience, as well as selected models of technology acceptance. The paper goes on to discuss the results of a survey of selected Polish cities' tourism applications.

Design/methodology/approach: For the purpose of the study, a critical analysis of the literature on the subject was carried out, followed by analysis of selected applications and a qualitative study of application users' comments. The study was conducted in accordance with the constructivist grounded theory. The process of user comment coding and analysis involved the use of the ATLAS.ti qualitative data analysis software.

Findings: Based on the critical analysis of the literature and the survey of selected applications, a city tourism app functionality assessment model has been proposed. The need for urban app changes, to enhance the tourist experience, has been indicated as well.

Research limitations/implications: The subject of the study comprised official city tourism applications. The survey encompassed applications which met the following criteria: the apps surveyed were official city apps, the potential thereof were tourists, the apps have been rated and commented.

Practical implications: The results of the study can serve to increase the effectiveness of the promotional activities implemented by cities employing such applications to form relations with tourists. To a limited extent, they can also serve to facilitate the designing of apps intended for city residents.

Social implications: The article draws attention to the issues of user involvement in the process of city tourism app development. The sphere of city applications can become a platform for tourist interaction, while the apps themselves can improve the quality of the tourists' experience as well as their functioning in the city.

Originality/value: The article fills the research gap in the studies on city tourism apps. It draws attention to the necessity of taking the following into account when designing such applications: the specifics of the tourist experience as a process, consideration of the app as an element of the tourist's technological experience, accentuation of those app functions, which are crucial from the perspective of the app acceptance process.

Keywords: mobile apps, city tourism apps, tourist experience, technology acceptance process, technology adoption process.

Paper category: Research paper.

1. Introduction

The rapid development of mobile technologies and the increase in users' digital competence have been fostering organizations' use of mobile devices as a tool for communication, sales and consumer relationship building. Daily use of mobile devices and apps has become a habit for the modern consumer (Dorcic et al., 2018). Consumers use mobile apps to make purchases, browse social media, listen to music and watch movies. When traveling for tourism, consumers also turn to a range of mobile apps which help them plan and execute their trips.

Mobile apps are perfectly suited to the peculiarities of urban tourism, where tourists usually opt for a short stay in particular city and want to quickly obtain information about the city, its history, economy, and the residents' culture and customs (Zawadzki, 2018). Cities, especially those with a rich tourist offer, are among the most visited tourist destinations (Papinska-Kacperek, 2016; Beluszko, 2015; Chmielewski et al., 2022).

Tourists have a range of technologies at their disposal to help them get acquainted with a given city's offer: making it easier to navigate the city, develop sightseeing itineraries, book accommodation, check historical monument and restaurant recommendations. City apps developed for tourists, which can serve as an alternative to many individual tools, are one such technological innovation.

The article attempts to determine what functions and elements a city app should include in order to be a useful tool for tourists and to contribute to the city's promotional goals. It discusses the role of such apps in the tourist experience as well as examines what main functions and elements a city tourism app should include in order to increase its acceptability to tourists, taking the level of the technological experience offered and the functions performed at different stages of the tourist experience into account, from the perspective of selected theories of information technology (mobile application) adaptation.

The purpose of the article is to investigate what functions a city's tourism app should include in order to serve as a useful tool for the tourists. To determine these functions, the following tasks were necessary:

1. Examination of the role of a city tourism app in the tourism process, at various stages thereof.
2. Identification of the role of a city tourism app in the process of building different levels of a tourist's technological experience.
3. Identification of the factors which are of key significance from the perspective of the technology (application) acceptance process, resulting in a proposal of an application assessment model.
4. Assessment of selected city apps (Polish cities) in terms of the realized tourist experience building and application acceptance functions.

5. Development and proposal of a city tourism app assessment model: identification of the main categories to be included at the stage of city tourism app design, which can be serve as measurement scale elements in quantitative studies.

The research objectives were implemented based on a critical analysis of the literature on the subject and an analysis of the city apps, including user comments, developed for the largest cities in Poland.

2. City tourism applications as a tool for building tourist experience

2.1. Mobile apps in tourism

Mobile apps are a type of software designed for mobile devices, mainly cell phones and tablets. These are either paid or free of charge software solutions, the vast majority of which are available vis Google Play (for Android devices), iTunes App Store (for iOS) and Windows Phone Market (for Windows Phone operating system) (Seweryn, 2014). Some applications also use micropayments - such apps provide additional features only after a fee is paid.

Mobile applications, using the technical capabilities of a mobile device, can enable a very wide range of functions, such as game playing, information browsing, listening to music, establishment of contacts and communication with friends, or purchase making. In practice, most of the available apps combine the functions listed.

Mobile applications can be divided according to the manner of the development thereof:

1. Native applications - developed in a specific programming language for a particular mobile device operating system (e.g., Java or Kotlin for Android, Swift or Objective-C for iOS). These apps are tailored to a specific operating system, by which they gain wide access to the mobile device's features and resources: camera, GPS, microphone, calendar, clock, address book. They work smoothly, efficiently, in online, offline and mixed modes. The disadvantage of the solution entails the longer time and cost of developing applications compatible with different systems.
2. Responsive (web) applications - special versions of websites, which are adapted for mobile devices. They do not require different versions for different operating systems. They are a cheaper, faster solution, but the capabilities of this type of applications are less.
3. Hybrid applications - applications consisting of native and web app elements. They are compatible with all mobile device operating systems, with possible use of both the functionality and the resources of the mobile device (e.g., camera, GPS, calendar, etc.). They can run slower than native apps (Manczak, Bajak, 2021), however.

Based on the possible application thereof, mobile apps can be divided into personal, informational, transactional, location-based, business and entertainment apps. Each of these types finds application in tourism (Piechota, 2014), including the city apps developed for tourists.

Typically, urban tourism apps are intended to facilitate the planning of a visit to a given city and enhance the tourist's experience during the stay. Such apps also aid the users in the choice of the tourist attractions, restaurants, hotels, cultural events, as well as simplify sightseeing route planning. They provide city information, photographs, audio and video content. They enable the users to navigate the city, by offering sightseeing routes and maps with marked objects (e.g., bus/subway stops). They often include local guides with hospital, pharmacy, ATM, parking lot or city bike rental addresses and locations. Such apps can be of practical use not only for tourists, but for residents as well (Papinska-Kacperek, 2016).

Development of city tourism apps can be commissioned by city authorities or such public institutions as museums, associations, and tourism organizations. They are usually made available to users free of charge, through Google Play, App Store and WP Market, or via government office and other public institution websites. Museum apps installed for a fee, for instance, can be an exception. Such apps are also developed as 'grassroots' initiatives and made available free of charge via public data platforms (Papinska-Kacperek; Polanska, 2016).

A large number of tourism apps are developed by various private entities or associations (e.g., hotels and restaurants) wanting to promote their services in this way. Most of such apps are free of charge, while the system maintenance is financed by the fees charged for in-app advertisements or for inclusion of advertised institutions' full offers in given categories of facilities (e.g., restaurants). Companies such as Amistad sp. z o.o. (apps for the cities of Toruń, Bydgoszcz, Gdynia), Alles Web (Toruń, Warsaw, Poznań), Clearvision sp. z o.o. (Krakow, Warsaw, Zakopane) or SmartGuide s.r.o. (Krakow, Warsaw) specialize in development of commercial city applications.

The city tourism applications financed by local governments can serve such purposes as:

1. Collection of information on the users, their characteristics, and behavior during their stay, via analysis of the GPS module data. The collected data allow personalization of the tourist communication and offer.
2. Promotion of the city (region) and its offer, as well as sales activation - based on the collected user data, such apps allow targeting the users with personalized marketing, taking user location and preferences into account. In addition to providing the tourists with city-related information, such apps can be used to promote local tourist businesses, by offering various types of city cards entitling to catering, hotel service and city guide discounts, etc.

3. Tourist traffic management - information on the tourists' location allows the apps to track their sightseeing routes or the places visited, including the time spent at those locations. Based on such data, tour route times can be estimated, users can be suggested different routes and encouraged to visit less frequented locations. City apps can also be used in various critical situations tourists may encounter, e.g., to help manage their city navigation and communicate necessary information (Dorcic et al., 2018; Kachniewska, 2019).

2.2. The role of tourism apps in tourist experience

Modern tourists reach for tourism apps (including city apps) and other modern IT tools at different stages of their travels, with different intensities (Dziadkiewicz, 2020).

At the stage of travel arrangements, tourists need to make a number of decisions regarding the destination, place of departure, attractions to be visited. They acquaint themselves with the city descriptions by browsing online sources (e.g., travel blogger sites, social media groups dedicated to tourism, city websites, websites of individual tourist attractions), rather than by using traditional book city guides (Figure 1). In this stage, tourists turn to the tools facilitating travel route planning (maps, carrier websites, hotel service aggregators, such as booking.com, or recommendation websites dedicated to individual tourism). They then book the travel services, using various organizations' websites and applications, which store information on the tourists' transactions, tickets, reservations, discounts and special entitlements.

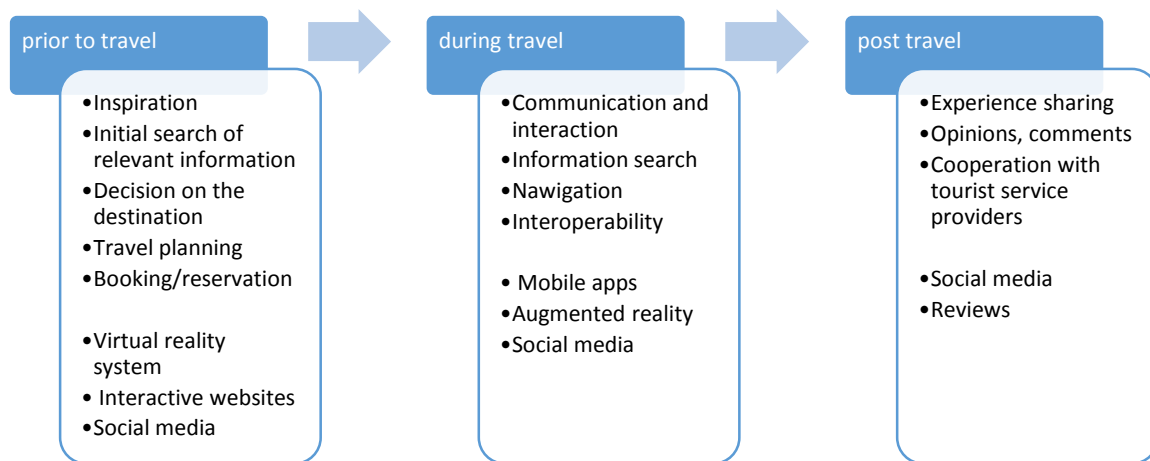


Figure 1. New technologies in the tourist travel process.

Source: Neuhofer et al., 2014, p. 2.

At the destination, the apps and social media supporting the tourists during their stay are of utmost importance. Modern technologies help navigate the city, choose a restaurant, based on other tourists' recommendations, take advantage of discounts and city cards, or learn about the history of a given city and individual sites, via QR codes and augmented reality technology. Owing to modern technologies, part of the travel arrangement and information gathering process can even take place at the destination (Beluszko, 2015; Niemczyk, 2017).

Post-travel, tourists share their impressions and opinions with others both face-to-face, but also through modern technologies, by posting travel photos and descriptions on social media, sending photos via instant messaging, posting reviews in various apps and social media. The reviews and opinions shared can serve as an important source of information for future tourists.

Mobile apps and other modern technologies can be used at various stages of travel, with different intensity. Based on the level of modern technology use, several levels of tourist experience can be distinguished (Neuhofer et al., 2014):

1. Conventional experience – tourists make little or no use of new technologies, and are characterized by low involvement in creating the tourism experience.
2. Technology-assisted experience) – tourists use new technologies to a limited extent. New technologies assist the tourist experience by facilitating communication, web browsing, accommodation and ticket booking. Tourists do not use new technologies to co-create the experience or interact with other participants. Tourist involvement and experience co-creation remain at a low level.
3. Technology-enhanced experience –technology using tourists actively participate in the creation of their experience and interact with other participants – they comment and share their experiences. The level of tourist involvement is high.
4. Technology-empowered experience – high degree of the tourists’ use of the available technological solutions, and high involvement in the experience co-creation. At this level of tourist experience, technology must exist in order for the experience to occur, as it constitutes an integral part of the experience, combining all travel stages, various travelers, as well as online and offline experience.

Urban tourism apps can include elements supporting tourist experience at different levels, which enrich his/her experience as well as enhance his/her involvement and satisfaction as a user (Neuhofer et al., 2014). At the lowest level - conventional experience - tourists make little or no use of the apps. These are tourists who use off-the-shelf solutions, travel agencies, and organized tours.

At a higher level - tourists use apps facilitating travel planning and function during the stay in a particular city. Apps which offer this type of experience mainly function as:

1. Mobile travel guides, featuring:
 - a) Descriptions of tourist sites, usually grouped into categories. Such descriptions can include audio and video files, links to the stie/monument/facility websites.
 - b) Descriptions and lists of accommodation facilities, eating establishments, sports facilities, etc.
 - c) Ready-to-use suggestions for sightseeing routes and hiking/biking trails, as well as trip planners, maps with marked tourist facilities.

- d) Information on events (cultural, sports, business) taking place in the city, as well as news.
- e) City guides - parking zone and parking lot information, taxicab stands, hospital and emergency room information (Dorcic et al., 2018; Papinska-Kacperek, 2016).

Such applications should be available in several languages and possibly include simple, useful, tourism-related phrases.

2. Sales activation support - an app offering tourists financial benefits, as well as enabling purchase of various types of 'city cards' entitling to unrestricted use of public transportation, discounted or free-of-charge public/tourist attractions, discounts on food services. Purchases via such apps are cheaper and facilitate sightseeing – e.g., tourists do not waste time in ticket office queues at busy tourist attractions.
3. City navigation support - city apps can include features typical of location-based applications (e.g., Google Maps), supplemented with elements serving particular needs of urban tourists, e.g., preference of walking routes, or route planning inclusive of tourist attractions, restaurants, cafes, as suggested routes are not personalized.

Technology-enriched applications include basic functions typical of lower-level applications. They also take the social functions, consisting of tourist and app user interaction, into account, in order to increase the involvement thereof through:

1. experience sharing, in the form of ratings, comments, photo and video posting,
2. inclusion of objects/sites/facilities previously not featured in the application, generation and sharing of personalized routes,
3. acquaintance with other tourists' ratings and reviews, participation in user discussions (Dorcic et al., 2018; Kachniewska, 2019).

These 'social elements' alter the tourist experience by enriching passive app reception with elements of application resource co-creation. As a result, users can contribute to altering the tourists' decisions, as well as foster 'off-the-beaten-path' tourism or other forms of urban exploration, which can promote the tourists' re-visits to a given city (Papinska-Kacperek, 2016).

Other consumers' opinions serve as an important source of information for tourists, while interaction with other participants enriches the tourist experience with additional values and increases one's satisfaction with their stay. It is thus important to facilitate the tourists' expression of opinions, not only by provision of such technical opportunities, but also by rewarding tourists for their activity with points or discounts in a gamification program (Dorcic et al., 2018).

At the level of technology-driven experience – a city tourism application still performs informational, social and sales functions, but in a disparate manner. Technologies enabling the collection and processing of user data are used to create systems recommending personalized information, services and products to tourists, tailored to their characteristics, preferences and behaviors.

Such recommendation systems can use (Chen, 2019):

1. Content Filtering – by analyzing the user preferences, information search history and choices made, e.g., the tourist attractions visited, other solutions are offered, consistent with the consumers' previous preferences. The disadvantage of such recommendations is that they offer a very narrow set of similar information and products.
2. Collaborative Filtering – deals with the preferences of user groups of similar characteristics and behaviors. Based on an analysis of their behavior, solutions tailored to users with similar characteristics are proposed.
3. Hybrid Filtering – a combination of recommendations based on the user's past behavior and the behavior of other users with similar characteristics.
4. Demographic Filtering – the system divides users into groups of similar demographic characteristics and tracks their preferences and behaviors regarding each category.

A personalized recommendation system typically uses more than one of the above methods.

A recommendation system based on location data increases user satisfaction, by including recommended tourist attractions and the ratings thereof, sightseeing routes, restaurants, public transportation, community networks. Other users' opinions and ratings can be shared, based on an algorithm accounting for the social and geographic distance between users, which affects the relevance of such recommendations as well as promotes user interaction. A recommendation system that offers personalized guidance at the time of decision-making can improve a tourist's quality of life, by suggesting tourist attractions, facilities, services, which can be of actual interest to him/her (Chen, 2019).

Tourist experience can be also enhanced through the use of augmented reality (AR), i.e., a system synthesizing the real world with a computer-generated world (Doricic et al., 2018). Based on geolocation data, device orientation (accelerometer data) and camera or QR-code-derived images, real-time 3D graphics are generated, which merge real images with the past or future appearance of given objects (Kaczorowska-Spychalska, 2015). Another application of augmented reality entails consolidation of a camera image with plotted points meeting specific search criteria, e.g., museum facilities, restaurants, hotels, etc. (Papinska-Kacperek, 2016).

Augmented reality often constitutes an important element of urban games, combining city images with the virtual world of a game. Urban game is a form of play, implemented within urban space in real time (Beluszko, 2015). Game participants compete for a prize, by performing individual tasks specified by the game scenario, e.g., finding a particular tourist object. The tasks can be completed individually or in groups (Mazurkiewicz, 2015). Urban games are used to promote cities and knowledge thereof, in combination with interactive play. Game scenarios can pertain to various assets of a given city, its history, monuments, nature (Beluszko, 2015). Simple urban game schemes are also applicable at lower levels of tourist experience. When the organizer's goal is to increase the participants' involvement and enhance the associated emotions, however, augmented reality and gamification mechanisms are employed (Mazurkiewicz, 2015).

2.3. Selected models of technology acceptance

The design and development of a city application should involve special attention to the features increasing the potential tourists' acceptance and use thereof. A number of technology adoption models, including the Technology Acceptance Model (TAM) and its later modifications, the Unified Theory of Acceptance and Use of Technology (UTAUT) model, and the D&M Information System Success Model (D&M ISSM) (Diamond et al., 2018) can be used to study the impact of information technology (mobile application) features on technology acceptance. The models presented in Table 1 have been developed on the basis of previous theories, including the Theory of Reasoned Action (TPA) (Ajzen, Fishbein, 2000) and the Theory of Planned Behavior (TPB) (Ajzen, 1991).

I. Ajzen and M. Fishbein assumed that future usage behavior (e.g., application usage) can be inferred based on the study of behavioral intentions. Intention is the result of the user's attitudes toward a given behavior and toward the perceived social impact of that behavior (Diamond et al., 2018). Attitude - a positive or negative assessment - is instead shaped based on the perceived technology characteristics (Alsamydai, 2014).

Table 1.
Selected technology acceptance models

No.	Model, author, source	Categories (Determinants of technology acceptance)	Effects sought
1	TAM (Technology Acceptance Model) Davis 1985, p. 24	Perceived Usefulness Perceived Ease of Use X1,X2,X3 (design features)	Attitude Toward Using Actual System Use
2.	TAM2 (Technology Acceptance Model2) Venkatesh, Davis, 2000, pp. 186-204	Perceived Usefulness Perceived Ease of Use - Subjective Norm - Image - Job Relevance - Output Quality - Result Demonstrability modifying variables: - Previous experience - Voluntariness (use of technology)	Intention to Use Usage Behavior
3.	TAM3 (Technology Acceptance Model3) Venkatesh, Bala, 2008, pp. 273-315	Additional determinants of perceived ease of use were introduced into the TAM 2 model (above): - Computer Self- efficacy - Perception of External Control - Computer Anxiety - Computer Playfulness - Perceived Enjoyment - Objective Usability	Behavioral Intention Usage Behavior
4.	Moon, Kim 2001, pp. 217-230 (TAM modification)	Perceived Usefulness Perceived Ease of Use Perceived Playfulness	Attitude toward Using Behavioral Intention to Use Actual Usage
5.	Shin, Kim 2008, pp. 378-384 (combination of TAM and Flow Theory)	Perceived Usefulness Perceived Synchronicity Perceived Enjoyment Perceived Involvement Flow	User Intention

Cont. table 1.

6.	Wu, Wang, 2005, pp. 719-729 (TAM modification)	Perceived Usefulness Perceived Ease of Use Perceived Risk Cost Compatibility	Behavioral Intention to Use Actual Use
7.	UTAUT (Unified Theory of Acceptance and Use of Technology), Venkatesh et al., 2003, pp. 425-478	Performance Expectancy Effort Expectancy Social Influence Facilitating Condition modifying variables: Gender Age Experience Voluntariness of Use	Behavioral Intention Usage Behavior
8.	D&M Information System Success Model (primary version) DeLone, McLean, 1992, pp. 60-95	System Quality Information Quality	Use User Satisfaction Individual Impact Organizational Impact
9.	D&M Information System Success Model (expanded version) DeLone, McLean, 2003, pp. 9-30	Information Quality System Quality Service Quality	Intention to Use/ Use User Satisfaction Net Benefits
10.	Alsamydai, 2014, pp. 2038-2051 (combination of TAM and D&M ISSM)	Quality factors: - Information Quality - Services Quality - System Quality Perceived Ease of Use Experience) Perceived Usefulness	Attitude Towards Using Behavioral Intention to Use Use
11.	Chen, Tsai, 2019, pp. 628-638 (combination of TAM and D&M ISSM)	Information Quality System Quality Perceived Convenience of Use Perceived Usefulness Perceived Ease of Use	Intention to Use
12.	NPD-TAM New Product Development TAM Diamond et al., 2018, pp. 400-409	Perceived Usefulness Perceived Ease of Use Trustworthiness: Privacy and Security Expectations; Quality and Reliability Expectations Compatibility Factors: Actual Self Compatibility, Wish Self Compatibility and Ought Self Compatibility; Self Perspective Compatibility, Other Perspective Compatibility	Behavioral Intention

Source: own compilation based on: Davis, 1985, p. 24; Venkatesh, Davis, 2000, pp. 186-204; Venkatesh, Bala, 2008, pp. 273-315; Moon, Kim, 2001, pp. 217-230; Shin, Kim, 2008, pp. 378-384; Wu, Wang, 2005, pp. 719-729; Venkatesh et al., 2003, pp. 425-478; DeLone, McLean, 1992, pp. 60-95; DeLone, McLean, 2003, pp. 9-30; Alsamydai, 2014, pp. 2038-2051; Chen, Tsai, 2019, pp. 628-638; Diamond et al., 2018, pp. 400-409.

Most technology acceptance models are used to measure the impact of the factors being tested on purchase intention. Some models are based on the assumption that the process of new technology acceptance can be cyclical. Under the influence of trial use, users shape their attitudes toward the technology and decide to use it (DeLone, McLean, 2003).

When assessing given technology, users pay attention to the perceived usefulness and ease of use thereof. In most models, both categories are present (Gromadka, 2020) (Table 1).

Perceived usefulness is defined as the degree to which a person believes he/she can benefit from using the technology (Alsamydai, 2014). These benefits derive from such given technology's characteristics as:

1. information quality - an application is useful to a user if it provides information which is complete, reliable, up-to-date, easy to understand and personalized,
2. system quality - refers to the fit between the application and the tasks users believe it should perform, i.e., the ease of information search and the quality of the results obtained, e.g., personalized recommendations,
3. service quality - refers to the overall support the technology provider delivers to the service recipient (DeLone, McLean, 1992, 2003; Venkatesh, Davis, 2000; Venkatesh et al., 2003; Chen, Tsai, 2019).

Most technology acceptance models include a category of perceived ease of use (Table 1). Perceived ease of use is defined as the degree to which a person believes that the use of particular technology is free of physical and mental effort (Alsamydai, 2014). Perceived ease of use significantly affects the attitudes toward technology through two main mechanisms: self-efficacy and instrumentality. This means that the easier a system is to use, the greater the user's sense of efficacy should be. Perceived ease of use can also improve a given person's performance as well as affect the perceived usefulness of the technology (Alsamydai, 2014).

Perceived ease of use is dependent on the user's characteristics, his/her ability to use the technology, including concerns and willingness to use the technology (Venkatesh, Bala, 2008). Ease of use is also associated with the convenience of application use, although this category is separable in the model developed by C.C. Chen and J.L. Tsai (2019).

Some authors also separate the cost of technology use from this category, namely all the frustrating experiences encountered while using the technology, e.g., when app performance is too slow, content is outdated, links are missing (Wu, Wang, 2005). Experiences of this type can lower the user's confidence in the technology, increase the perceived risks and user concerns regarding e.g., the security of in-app data and transactions (Diamond et al., 2018; Wu, Wang, 2005; Venkatesh, Bala, 2008).

One important category to be considered and studied while developing tourism apps entails the contentment and enjoyment (playfulness) users derive from using a given city app (Dorcic et al., 2018). In J.W. Moon and Y.G. Kim's (2001) model, perceived playfulness is understood through three dimensions:

1. concentration - denotes the degree of the user's focus on the technology and preoccupation with it,
2. curiosity - determines how much the application content stimulates the user's cognitive curiosity and encourages him/her to explore the given app,
3. enjoyment - the user's involvement, for the enjoyment and pleasure of using the given application, rather than for the rewards (Moon, Kim, 2001).

D.H. Shin and W.Y. Kim (2008) further supplement the ‘enjoyment of use’ category with the state of flow - a state of mental elation. While enjoyment of use can lead to greater user involvement and subsequent purchase intention, the state of flow, i.e., the state of engrossment in the technology being used, directly affects the intention to use it.

The ISSM D&M model (DeLone, McLean, 2003) also includes a category of net gains. The comparison of gains and losses has been present in the theories of Fishbein and Ajzen (TPA, TPB). When users recognize more benefits than costs, they are more likely to accept the technology and their satisfaction increases. The ‘net benefits’ in the ISSM's D&M model are not limited to the balance of the positive and negative impacts of the technology on customers, but also include other stakeholders, the local community as a whole. In the case of a tourism app, its positive and negative impact can be measured in relation to both the tourists and internal city stakeholders, by examining, for example, its impact on the sales of local tourism enterprises’ services, on the positive image of the city, etc. The postulate to measure the impact of technology not only on the users but on organizations as well emerged in the earlier version of the D&M ISSM model (DeLone, McLean, 2003). The authors proposed to determine the impact of technology on users and organizations - in the case of city applications this pertains to the city and its stakeholders – separately.

Depending on the city's offer, its objectives, and the app's affiliation with other means of marketing communication, different categories should be developed and tested at the stage application development.

3. Survey of selected Polish cities’ tourism applications

3.1. Survey methods

In order to identify the key functions of a city tourism app, the official apps of the largest tourist cities in Poland were surveyed. Application users’ comments were collected and subjected to qualitative analysis.

Information on the following aspects was sought:

- app popularity among users (number of downloads, user comments, positive and negative ratings, administrators’ reactions),
- technology, tools offered by app (level of technological experience),
- app features indicated by users.

The study covered the largest tourist cities in Poland. The list was compiled on the basis of a Central Statistical Office (CSO) report (Tourism in 2021, 2022), the rankings published on tourism portals, and the list of the Polish cities which are members of the Eurocities network - an association of large European cities. Only city-hall-owned apps or, in the absence of such,

applications owned by a public city institution or association were selected for the study. The data on the apps was derived from Google Play - the largest online platform selling mobile apps - and the cities' official websites, social media accounts, as well as directly through analysis of the apps themselves. Other sources of information entailed the results of studies compiled in other scientific publications (Zawadzki, 2018; Manczak, Bajak, 2021; Pawlowska-Legwand, 2019).

Cities which did not have an official mobile app, or whose existing app served the residents only, e.g., to submit applications, check the time and place of waste collection, obtain information on the projects submitted as part of civic budgets, were removed from the list of the 24 largest tourist cities. Survey of the for Toruń and Budgoszcz apps was abandoned as well, despite the fact that both applications serve the function of a tourist guide, due to a too small number downloads (500+ people) and the lack of user comments and ratings.

The remaining apps were surveyed to determine the elements used to build the tourist experience as well as subjected to qualitative analysis - user comments in the apps surveyed. In accordance with the principles of the grounded theory, the comments text was subjected to coding - open coding first, followed by analytical coding. As a result of the operations carried out the in-vivo codes (grouping, division into categories), several main categories were extracted (Sokolowska et al., 2022). These main categories were counted and classified.

3.2. Survey results and discussion

The applications included in the study differ in the time of creation, number of downloads and functions fulfilled: from the simplest - offering information or sales functions only (Gdansk), to applications enriched with augmented reality (Warsaw, Lublin, Olsztyn). The characteristics of the selected applications and the classified user comments are presented in Tables 2 and 3.

The Turystyczny Lublin [Tourist Lublin] app is characterized by the largest number of functions. It performs all informational functions, but in addition, it stands out from the other apps in terms of graphics, use of augmented reality, and the attempted linking of the app with social media. Its use, however, raises many problems, i.e., the application runs too slowly or stops after clicking on links to other sites. The app had been developed several months earlier and since then has been promoted via the city's website and social media. It has received only about a dozen comments, nearly half of which pertain to technical issues: primarily the app's slow operation and the problems with codes, links. Nevertheless, users do mention its advantages: it facilitates navigation, the information provided is of interest and use not only for tourists, but the residents as well. They also praise its visual side and the inclusion of augmented reality. According to the users, the app is useful for both tourists and residents, although it needs to be fine-tuned.

A different type of application is Kraków.pl, which primarily offers informational and navigational functions. It was developed in 2013 at the earliest, and functions as a guide to the city. It can serve as an essential tool when visiting Cracow, as it entails a practical, comprehensive collection of tourist information. The app does not offer any additional features, however, nor does it provide pleasure from exploring the app itself. As with most city apps, it lacks financial incentives: tourist card and discounts for using local businesses, e.g., restaurants, hotels, guides.

The Kraków.pl app is the most frequently downloaded and commented on city application. Every third comment, however, refers to technical problems experienced by its users. These issues mostly concern problems with updating the application, downloading data, as well as starting, stopping the application. Complaints about its unintuitive use and problems with in-app links and notifications are less frequent. One very important issue entails the quality of information. The app serves as a detailed guide for its users, including the city residents, who indicate errors in the content resulting from the lack of updates: errors regarding public transportation, ticket prices, street changes, parking zones, missing events. Other users pinpoint that the application has expanded their knowledge of the city, while the information itself is interesting, rich, and useful in sightseeing.

According to some users, navigation and orientation via the app is not very clear, while others believe that the app has helped them to get around the city and find tourist sites. The visual side of the Kraków.pl application is under criticism, however, and are no positive comments in this regard. The users have criticized the quality of the photos, the color scheme used, and the object description text included. Despite these shortcomings, more than half of the users have complimented the application, most often finding it useful for both tourists and residents.

Information functions, albeit to a limited extent, are also fulfilled by the Metropolia Bydgoszcz app. The application still needs to be refined, however, both in terms of the information presented as well as the content, graphics and photo structure. The function of an information guide for tourists is also fulfilled to a very limited extent. In addition to information regarding historical monuments and accommodation, it does not contain other relevant information tourists need, such as public transportation info, including ticket prices, or food facility info. The users also pointed to the lack of up-to-date content.

The only app offering sales functions is the application of the Gdansk City Hall - the Karta Turysty [Tourist Card], which offers purchase of one of several types of tourist cards entitling users to a number of attractions, including promotional offers for the purchase of tickets to various tourist attractions as well as discounts for the use of food and beverage services. The app is also used by the residents to purchase public transportation passes and season tickets. Nevertheless, its usefulness as a mobile tourist guide is limited.

Another application - Visit Olsztyn - was intended to provide a higher-end technology experience. In 2014, after its launch, the app was rated very well as a comprehensive tool, and highly recommended to other users. It was also complimented on its use of augmented reality. The last time the app was updated was in 2017, however, and since then it has been criticized for technical problems - including the inability to launch the app.

Such problems have not been experienced by users of the Wasza Warszawa [Your Warsaw] app - the app does not cause major technical problems. It was developed in 2018 for the History Meeting House (a cultural institution of the city of Warsaw) and has been bringing both tourists and residents closer to important moments of the city's twentieth-century history.

The app includes photos, short biographies of key historical figures, recordings, routes leading to historically important places, interactive maps, as well as urban games using augmented reality technology. The app does not act as a typical tourist mobile guide, nevertheless, the users' assessments are mostly positive.

According to the users, *the app allows one to learn about Warsaw, and its history in particular*, the information provided is presented in an interesting manner, but the app needs to be supplemented with information on a greater number of objects/sites and important events (e.g., the years 39-45).

Table 2.

Specification of selected Polish cities' tourism applications

Application characteristics and elements	Cracow	Warsaw	Lublin	Olsztyn	Bydgoszcz	Gdansk
Application name, owner	Kraków.pl City Hall	Wasza Warszawa [Your Warsaw] History Meeting House	Turystyczny Lublin [Tourist Lublin] City Hall	Visit Olsztyn City Hall	Metropolia Bydgoszcz Stowarzyszenie Metropolia Bydgoszcz* [Bydgoszcz Metropolia Association]	Karta Turysty [Tourist Card] Stowarzyszenie Gdańska Organizacja Turystyczna [Gdansk Convention Bureau]
Date of activation (Date of last update)	6.08.2013 (14.03.2022)	2.07.2018 (18.05.2022)	12.05.2022 (22.06.2022)	27.03.2014 (15.09.2017)	17.10.2018 (12.04.2019)	9.08.2019 (25.07.2022)
Number of downloads	50 thousand +	5000+	1000+	1000+	1000+	1000+
Rating	3.6	4.2	3.9	3.0	3.6	4.3
Information functions: Information on historical monuments, food routes, communication	Featured	Featured	Featured	Featured	Featured	None
Information functions: Current events and news	Featured	None	Featured	Featured	Featured	None

Cont. table 2.

Communication and navigation: Support: Maps and navigation, public transportation information, parking lots	Featured	Featured	Featured	Featured	None	None
Tourist cards - sightseeing and communication passes	None	None	None	None	None	Featured
Social functions (Ability to comment, ratings, social media)	None	None	Featured (limited)	None	None	None
Augmented Reality	None	Featured	Featured	Featured	None	None
Urban games	None	Featured	None	None	None	None
Attractive visuals, voiceover	None	Featured	Featured	None	None	None

* Metropolia Bydgoszcz is the owner of the Metropolia Bydgoszcz Association for the city of Bydgoszcz and surrounding towns

Source: own compilation.

Table 3.

Number of app user comments on comment-extracted categories

Application functions, elements	Cracow	Warsaw	Lublin	Bydgoszcz	Olsztyn	Gdansk	Total
System quality (technical issues)	29	2	5	-	13	-	49
Information quality	36	7	2	2	5	-	52
City navigation	16	1	3	-	-	-	20
Benefits (financial and other)	2	-	-	-	-	2	4
Trust (concerns regarding data security, content manipulation)	3	1	-	-	1	-	5
Enjoyment (visuals, AR, urban games)	6	1	3	-	1	-	11
Application usability (usefulness)	51	9	7	1	8	2	78
Involvement	16	-	4	-	4	-	24
User reaction	239	37	4	6	6	8	59
Administrator reaction	6	1	3	-	-	-	10
Positive assessment	49	8	6	1	7	-	76
Negative assessment	47	4	5	2	16	2	71

Source: own compilation.

Based on the comparison of selected applications' features and user comments (Table 2 and 3), it should be concluded that the official apps examined offer low-level technological experience to tourists. The applications mainly perform informational and navigational functions. At this level of the experience offered (technology-assisted experience), the apps should also encourage the use of local tourism-related businesses (e.g., restaurants, hotels, city guides).

The applications did not provide the users with the options of comment posting, facility rating, new route suggesting, etc. They therefore do not perform social functions. Only one app included social media links. The inefficiency in terms of the users' ability to co-create the content limits the tourists' use of the apps to the stages of city visit preparation and execution. They applications are thus not used at the 'post-travel' stage, and do not interact as an informal source with other tourists who are in the city or are just planning their visit.

This inefficiency also means that communication with the audience (users) takes place in the apps as a one-way communication process, where the sender pummels the passive receiver. Internet users increasingly expect a different model – a process of multilateral communication, in which the content recipients participate in addition to the sender [Wiktor, 2013]. Application users are not treated as partners in communication and sources of information; their app assessments, critical comments or suggestions for improvements are usually ignored by the application administrators (Table 3).

What is more, the apps are not integrated with the cities' other online means of communication. Usually, they are not promoted via the cities' official websites and social media channels. The comment analysis carried out shows that users expect the apps serve as a tool for ongoing communication, while most apps are too infrequently updated. In extreme cases, the apps contain outdated content or are not technically adapted at all to software changes in mobile devices (e.g., the Olsztyn app).

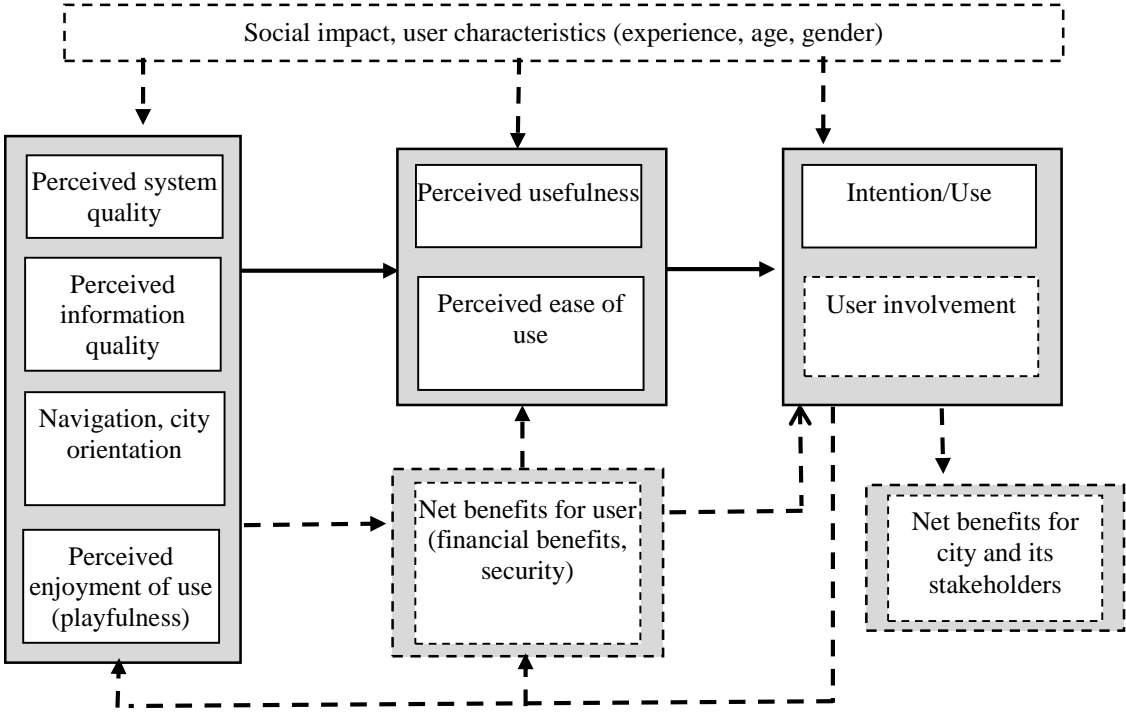


Figure 2. Model of city tourism application assessment.

Source: own compilation.

Some of the applications examined featured such elements as urban games and augmented reality, which were of interest to the users. Augmented reality and urban games can constitute part of technology-driven experience, increasing the enjoyment of technology use and city exploring. Such applications then become virtual travel companions, inspiring city exploration, suggesting personalized solutions, but they require efficient recommendation systems and lower-level functions – informational and social functions. In the case of the apps surveyed, augmented reality and urban games generated numerous technical problems for tourists and lacked social functions (e.g., the urban games in the Your Warsaw app in which only one user participates).

The apps selected were assessed against categories commonly used in technology acceptance models. Based on the grouped comments, it can be indicated that the primary categories to be included in the study of city apps include:

1. Perceived system quality - official city apps often fail to meet basic technical criteria. Users encounter problems with launching the apps, data updates, links to non-existent pages.
2. Perceived information quality - a criterion very important for users. In combination with the system quality criterion, it determines the usefulness of such applications as Kraków.pl.
3. Navigation and orientation in the city - a category of high importance for tourists, which should be separated from the information quality category. It refers to the navigation system used, interactive maps included in the application, the ability to search for nearby objects and information on public transportation.
4. Perceived enjoyment of use - although to a lesser extent, users did take notice of the additional elements (voiceover, visual side of the app, and augmented reality).

Users were less likely to pay attention to application trust issues (data security, information trust). Figure 2 suggests additional categories, based on the literature analysis: net benefits to the user and the organization, and user involvement. These categories were not present in the comments, as the surveyed apps did not typically include financial incentives or social features.

The impact of the above categories on the perceived usefulness and ease of use can be modified by the app-using tourist's experience, his/her age, gender and social influence (provided that the app includes social features).

The proposed categories of variables, as well as the dependencies between those variables, should be empirically verified in a quantitative study of city apps offering different levels of technological experience to tourists.

4. Conclusion

The design and development of a city tourism application needs to incorporate both the tourists' perspective, who expect a useful tool facilitating sightseeing, as well as the role of the application in the city's promotion system. It is imperative to determine what functions the app will perform, in order to increase its chances of acceptance and use by tourists at various stages of travel: preparation, implementation and post-travel. It is also necessary to determine the level of technological experience the app will offer to tourists, taking the city's capabilities and tourists' expectations into account.

The largest Polish cities' use of tourism apps for promotion is insufficient. The majority of cities do not provide applications offering sightseeing assistance to tourists, while the existing solutions contain many errors, preventing seamless use thereof. Future solutions for cities should be subjected to testing, taking the main categories identified in the study into account: perceived system quality, perceived information quality, the navigation and city orientation solutions offered, and the enjoyment a potential user can derive from using the app. A preliminary survey of the application developed will help avoid many mistakes as well as increase the likelihood of the app being used by tourists and the chances of achieving the city's promotional goals.

The use of intelligent recommendation systems, augmented reality, and participant interaction ensuring solutions will increase user involvement. Actively participating tourists who become involved in the process of experience co-creation, with other participants, help broaden and enhance the tourism experience. As ICT technologies are further developed and their penetration into everyday life continues, travel services will have to reach higher and higher levels in the integrating of experience and modern technologies.

References

1. Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, Vol. 50, Iss. 2, pp. 179-211, doi: 10.1016/0749-5978(91)90020-T.
2. Ajzen, I., Fishbein, M. (2000). Attitudes and the Attitude-Behavior Relation: Reasoned and Automatic Processes. *European Review of Social Psychology*, Vol. 11, pp. 1-33. doi: 10.1080/14792779943000116
3. Alsamydai, M. (2014). Adaptation of the Technology Acceptance Model (TAM) to the Use of Mobile Banking Services. *International Review of Management and Business Research*, Vol. 3, Iss. 4, pp. 2039-2051.

4. Biełuszko, K. (2015). Media elektroniczne jako narzędzie promocji turystycznej miasta, *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Gospodarka turystyczna w regionie. Przedsiębiorstwo. Samorząd. Współpraca*, Vol. 379, pp. 259-268, doi: 10.15611/pn.2015.379.25.
5. Chen, C., Tsai, J. (2019). Determinants of behavioral intention to use the personalized location-based mobile tourism application: An empirical study by integrating TAM with ISSM. *Future Generation Computer Systems*, Vol. 96, Iss. C, pp. 628-638, doi: 10.1016/j.future.2017.02.028.
6. Chmielewski, M., Pioch, J., Płoska, R. (2022). Infrastructure projects and transport exclusion –case study of the Pomorska Kolej Metropolitalna. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, No. 156, pp. 99-115. doi: 10.29119/1641-3466.2022.156.7.
7. Davis, F. (1985). *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Massachusetts Institute of Technology.
8. DeLone, W.H., McLean, E.R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, Vol. 3, Iss. 1, pp. 60-95, doi: 10.1287/isre.3.1.60.
9. DeLone, W.H., McLean, E.R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, Vol. 19, No. 4, pp. 9-30, doi: 10.1080/07421222.2003.11045748.
10. Diamond, L., Busch, M., Jilch, V., Tscheligi, M. (2018). *Using technology acceptance models for product development: case study of a smart payment card*, pp. 400-409, doi: 10.1145/3236112.3236175.
11. Dorcis, J., Komsic, J., Suzana, M. (2018). Mobile technologies and applications towards smart tourism – state of the art. *Tourism Review*, Vol. 74, No. 1, pp. 82-103, doi: 10.1108/TR-07-2017-0121.
12. Dziadkiewicz, A. (2020). *Design Management. Uwarunkowania i efekty wdrożenia w przedsiębiorstwie*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.
13. Główny Urząd Statystyczny (2022). *Turystyka w 2021 r.*
14. Gromadka, D. (2020). Model akceptacji technologii – krytyczna analiza piśmiennictwa, *Akademia Zarządzania*, Vol. 4, pp. 187-207. Retrieved from: <http://depot.ceon.pl/handle/123456789/18622>, 30.10.2022.
15. Kachniewska, M. (2019). Tworzenie wartości dodanej na bazie kontekstowych aplikacji mobilnych (przypadek branży turystycznej). *Kwartalnik Nauk o Przedsiębiorstwie*, No. 3, pp. 15-24, doi: 10.5604/01.3001.0013.4780.
16. Kaczorowska-Spychalska, D. (2015). Media interaktywne w kreowaniu wizerunku miast. *Przedsiębiorczość i Zarządzanie*, Vol. 16, Iss. 3, No. 1, pp. 87-110. Retrieved from: <http://piz.san.edu.pl/docs/e-XVI-3-1.pdf>.

17. Manczak, I., Bajak, M. (2021). Turystyczne aplikacje mobilne – ocena funkcjonalności oprogramowania VisitMalopolska. *Tourism, Vol. 31, Iss. 1*, pp. 29-38, doi: 10.18778/0867-5856.31.1.04.
18. Mazurkiewicz, B. (2015). Gry miejskie oparte na lokalizacji jako sposób promocji miasta. *Handel Wewnętrzny, Iss. 4(357)*, pp. 328-336. Retrieved from: <http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-926c6459-be9d-43c0-b617-03d20b35cb29>.
19. Moon, J.W., Kim, Y.G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management, Vol. 38, Iss. 4*, pp. 217-230. doi:10.1016/s0378-7206(00)00061-6.
20. Neuhofer, B., Buhalis, D., Ladkin, A. (2014). A typology of technology-enhanced tourism experiences. *International Journal of Tourism Research, Vol. 16, Iss. 4*, pp. 340-350. doi: 10.1002/jtr.1958.
21. Niemczyk, A. (2017). Aplikacje mobilne jako determinanta zachowań turystycznych (na przykładzie Krakowa). *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, No. 473*, pp. 370-380. doi: 10.15611/pn.2017.473.34.
22. Papińska-Kacperk, J. (2016). Miejskie aplikacje mobilne w turystyce kulturowej w Polsce, *Turystyka Kulturowa, Iss. 2*, pp. 67-85. Retrieved form: <http://turystykakulturowa.org/ojs/index.php/tk/article/view/720/646>.
23. Pawłowska-Legwand, A. (2019). Wykorzystanie technologii informacyjno-komunikacyjnych w dostępie do informacji i usług turystycznych w świetle wyników badań przeprowadzonych wśród polskich turystów w województwie małopolskim. *Tourism, Vol. 29, Iss. 2*, pp. 109-117. doi: 10.18778/0867-5856.29.2.22.
24. Piechota, N. (2014). Lokalizacyjna aplikacja mobilna jako narzędzie badań ruchu turystycznego w miastach. *Studia Oeconomica Posnaniensia, Vol. 2, No. 1(262)*, pp. 115-133.
25. Seweryn, R. (2014). Korzystanie z usług przewodnickich w dobie rozwoju nowoczesnych technologii na przykładzie Krakowa. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Problemy Zarządzania, Finansów i Marketingu, nr 35*, pp. 61-73. Retrieved from: http://www.wzieu.pl/zn/824/ZN_824.pdf.
26. Shin, D.H., Kim, W.Y. (2008). Applying the Technology Acceptance Model and Flow Theory to Cyworld User Behavior: Implication of the Web2.0 User Acceptance. *CyberPsychology & Behavior, Vol. 11, Iss. 3*, pp. 378-382. doi:10.1089/cpb.2007.0117.
27. Sokołowska E., Pawlak K., Hajduk G., Dziadkiewicz A. (2022). City brand equity, a marketing perspective. *Cities, Vol. 130*, doi: 10.1016/j.cities.2022.103936.
28. Urząd Komunikacji Elektronicznej (2021). *Badania opinii publicznej w zakresie funkcjonowania rynku usług telekomunikacyjnych oraz preferencji konsumentów: raport z badania klientów indywidualnych*. Retrieved form: <https://www.uke.gov.pl/akt/badanie-konsumenckie-2021-klienci-indywidualni,410.html>.

29. Venkatesh, V., Bala, H. (2008), Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, Vol. 39, No. 2, pp. 273-315. doi: 10.1111/j.1540-5915.2008.00192.x.
30. Venkatesh, V., Davis, F.D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*. Vol. 46, No. 2, pp 186-204. doi: 10.1287/mnsc.46.2.186.11926.
31. Venkatesh, V., Morris, M.G., Davis, G.B., Davis, F.D. (2003). User acceptance of information technology: Toward a unified view, *MIS Quarterly*, Vol. 27, Iss. 3, pp. 425-478. doi: 10.2307/30036540.
32. Wiktor, J.W. (2013). *Komunikacja marketingowa: modele, struktury, formy przekazu*. Warszawa: PWN.
33. Wu, J.H., Wang, S.C. (2005). What drives mobile commerce? *Information & Management*, Vol. 42, Iss. 5, pp. 719-729. doi:10.1016/j.im.2004.07.001.
34. Zawadzki, P. (2018). Aplikacje mobilne jako element systemu informacji turystycznej. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, nr 4(976), pp. 85-101. doi: 10.15678/ZNUEK.2018.0976.0406.

INTRODUCTION OF A NEW FRENCH BEER BRAND ON THE POLISH MARKET IN THE OPINION OF CONSUMERS

Elżbieta PIERZGALSKA^{1*}, Kamil REZMER², Iwona KOBUSIŃSKA³

¹ Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz, Faculty of Management;
elasiemaa768@gmail.com, ORCID: 0000-0003-3667-9863

² Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz, Faculty of Management;
kamilrezmer@outlook.com, ORCID: 0000-0003-3667-9863

³ Jan and Jędrzej Śniadecki University of Technology in Bydgoszcz, Faculty of Management, Bydgoszcz;
iwona.kobusinska@wp.pl, ORCID: 0000-0002-6123-0905

* Correspondence author

Objective: The study aims to identify the behavior, opinions, motives and expectations of Polish consumers towards beer brands, with a particular focus on a beer brand manufactured by a French brewery. The consumer survey carried out allows identification of several major potential consumer groups to be targeted by a medium-sized independent French brewery with its offer.

Methodology: The study employed the use of primary sources obtained via a measurement instrument, in the form of an online survey questionnaire, developed for the purpose of the ResearchLab 2022 academic contest organized by Le Sphinx. The consumer survey was conducted in the period from April 12 to May 01, 2022. A method of indirect measurement, i.e., a survey questionnaire, was used to collect the material, which allows collection and examination of data on large research populations. The questionnaire consists of introductory questions regarding the beer market in Poland, consumer behavior questions concerning consumer awareness, preferences and consumption motives, questions pertaining to market barriers and foreign beer brands, as well as a metric part. The research process involved the use of Sphinx software, which allows intuitive development of a survey questionnaire, its quick distribution, convenient collection of data, as well as comprehensive quantitative and qualitative analysis thereof. The platform additionally allows for real-time tracking of the survey results, which quite is important when conducting research on a well-defined study group. The survey encompassed a research population of 3792 respondents (male and female) of different age ranges. The sample size was determined on the basis of Internet accessibility in Poland (92.4%, in 2021) (2021 Information Society in Poland..., 2021, p. 125). In order to maintain result representativeness, the minimum number of survey participants was calculated at 2401 respondents, assuming a confidence level of 95% and an error of 2%. The representative sample was of a quota nature, defined by the contest holder, and encompassed 40% of respondents aged 18-35 and 36-55 respectively, as well as 20% of respondents over 56 years of age. Gender-wise sample distribution was 60% males and 40% females. The data was examined using such statistical methods as structure analysis, as well as positional or classical measures.

Results: The survey results show that the preferred beer package size is 500ml glass bottle, with an alcohol content of 3.6% to 7%. The main Polish market competition for the French independent brewery's new beer brand are Lech, Żywiec, and Desperados. The preferred beer types are lager (72%), IPA (47%) and flavored beer (47%). The beer flavors most commonly chosen by consumers on the Polish market are lemon and lime, mojito, apple and honey. An ideal beer, as typified by the respondents, would be characterized by average proportions of aroma, color, carbonation, bitterness and alcohol content. The factors prompting consumers to try new beer brands are primarily taste, price and advertising, therefore, it is worth focusing on the three, maintaining proportions in the order in which the factors have been presented. Information regarding alcohol novelties most commonly is derived from friends or Social Media, which is why advertising should involve the use of these channels for e.g., various types of Facebook, Instagram, Youtube, Tik Tok contests. The respondents reacted positively to the French beer brand, and the majority would opt to try this type of beer, given the opportunity. Their expectation with regard to the brand is high price, good quality and taste, as well as elegance. Its envisioned label design is associated with the national colors of France, the city of Paris, Napoleon, and the Alps. It is thus worth taking the above associations into account when designing the label.

Originality: The article presents the consumer opinions regarding introduction of a new French product on the Polish market. It is addressed to distributors of imported beer.

Key words: beer, beer market in Poland, France, French brewery.

Article category: Research Paper.

Introduction

Beer is a popular low alcoholic beverage, consumed since ancient times (Pal, Piotrowska, Adamiak, Czerwińska-Ledwig, 2019, pp. 145-152). Its emergence can be assumed to be associated with the human transition from nomadic tribes to sedentarity. Traces of beer-making vessels have been discovered in Iran, the Tigris and Euphrates basins and Egypt. Knowledge of the existence of beer can be acquired from the monuments remarking that a person who does not know beer, does not know what is good (Strojny, 2003). In ancient times, as well as in the Middle Ages, beer was considered not only a drink, but a medicine as well (Fałat, Górka, Plinta, Sadownik, 2002). Since 1990, improvement in the quality of beer and a rapid increase in the supply thereof can be observed. The rivalry for customers has begun at that time. Beer has not been in short supply, while the range of the choices in stores has been expanding (Boss, 2014).

The oldest known alcoholic beverage, the first variety of which had been consumed as early as in the 12th century BC, is beer. Rooted predominantly in a European culture, the brew has been successively refined over the years, and now entails a wide range of flavors, aromas, colors, manufacturing ingredients and alcohol content (Carlsberg Polska). Brewing is now recognized as a constantly evolving craft (Okrzesik, 1997). Breweries are seeking innovative techniques, while extensive research on various related aspects (e.g., proportions and

temperature selection, fermentation time etc.) is emerging. The goal is to tailor the recipe to consumer demands and introduce a unique, recognizable product on the market. The developed branches of transportation industry, globalization and international cooperation have allowed trade and exchange of products previously unavailable due to their short shelf life. Innovations have enabled production of exotic flavors of beers (Lamparska, 2016). Similar solutions are very advanced in the present day.

Consumption of alcohol has increased over the past 30 years in Poland, which keeps Poles ranked in the group of societies with the highest alcohol consumption. In 2020, the total value of the alcoholic beverages market was PLN 39.26 billion. Beer sales accounted for almost half (45.76%) of the market, with a value of PLN 17.96 billion. Beer dominates the volume of retail sales (in 2020, it accounted for 86.6% of the alcoholic beverage sales volume) and constitutes a chief alcohol category in small-format stores. It generates 50% of alcoholic beverage sales in the colder and more than 60% in the warmest months. There is a common misconception that Poles drink Polish beer. The beer market in Poland encompasses three foreign corporations. Kompania Piwowarska is owned by Japan's Asahi Group. Grupa Żywiec S.A. is owned in 65.16% by the Dutch Heineken International BV and 33.20% by China's Yunnan Ltd., whereas Carlsberg Polska is a Danish company (Klimkiewicz, Obłąkowska, Bartoszewicz, 2021).

Research results

A preliminary consumer survey was conducted in connection with the planned introduction of a French beer brand on the Polish market. The publication presents the results of the survey, which aimed to identify Polish consumers' behavior, opinions, motives and expectations with regard to beer brands. The study allows identification of the main potential consumer groups to be targeted by French brewery with its offer. Beer is consumed by 8 out of 10 survey respondents, i.e., a majority in relation to non-beer drinkers. Relevant data, in the form of percentage measures, is presented below (Figure 1).

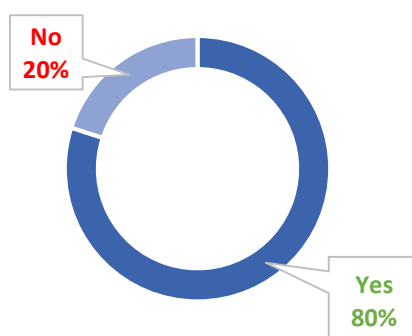


Figure 1. Survey respondents' consumption of beer.

Source: own compilation.

The most prevalent reason behind the surveyees' non-drinking of beer is the unsuitable taste of the beverage. This factor was indicated by one in three respondents (35%). Similarly, 31% of the surveyed specified that they prefer other types of alcohol (e.g., wine). One in two respondents does not consume beer due to health reasons (harmful effect of alcohol on the body). The factors least discouraging the purchase of beer are mainly the price (4%), which according to the surveyed is not too exorbitant. One in ten respondents does not consume beer because of pregnancy (9%) or prefers not to provide a reason (8%) (Figure 2). The determinants of beer consumption are shaped contrastingly. In this case, majority of the respondents (75%) are willing to try a new product based on such aspects as taste, followed by price (52%), recommendation (48%), interesting label/appearance (29%), and promotion (26%).

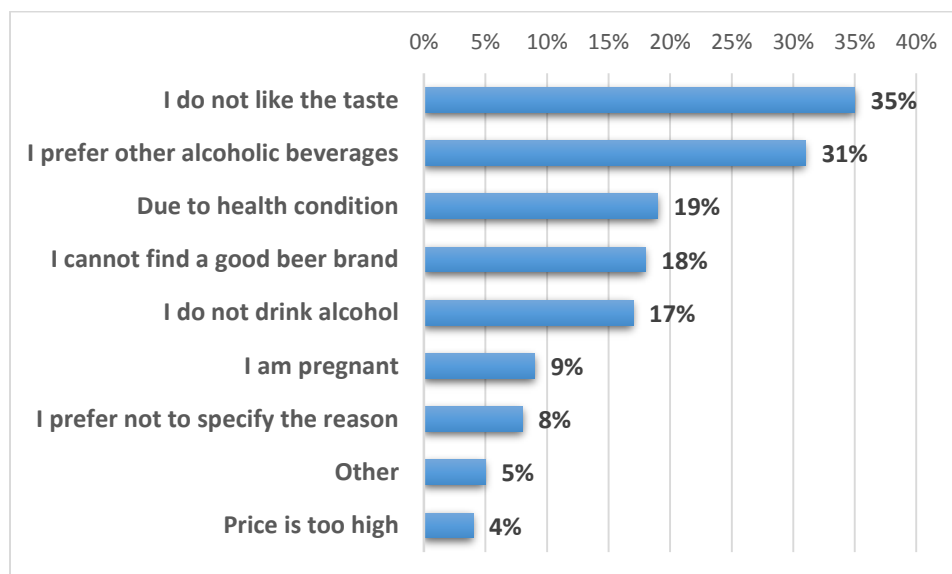


Figure 2. Factors discouraging beer consumption.

Source: own compilation.

More than half of the respondents drink beer 2-3 times a month or once a week. One in ten (6%) drinks beer every day. In contrast, as many as 2 in 10 respondents drink beer less than 2-3 times a month (Figure 3).

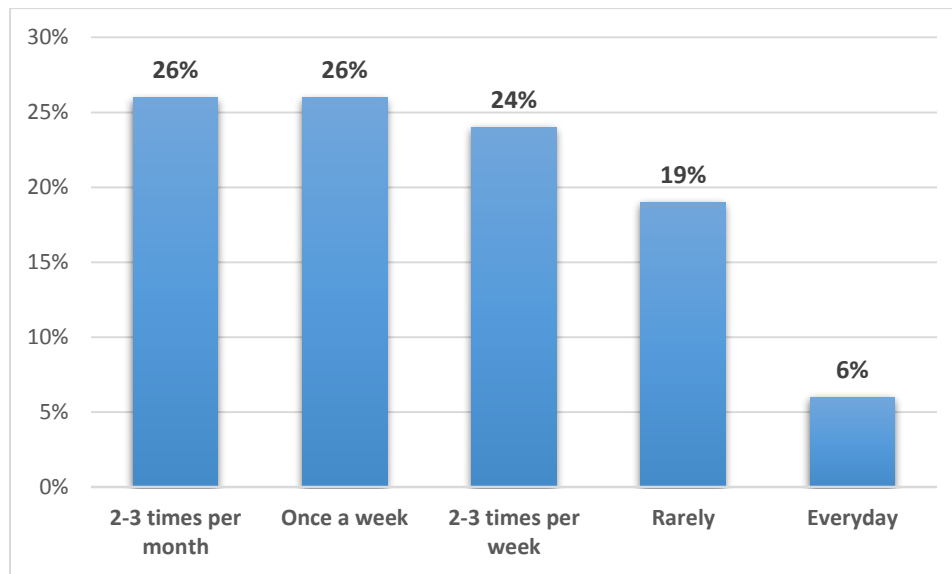


Figure 3. Beer consumption frequency.

Source: own compilation.

In the matter of beer consumption circumstances, most of the surveyed, i.e., one in four respondents (23%), drink beer when socializing with friends, almost one in five (17%) drink beer at barbecue get-togethers. Every ten respondent (11%) drinks beer during sports events, as well as while watching television, TV series or movies (10%). The remainder (i.e., less than 10%) drink beer occasionally, e.g., with a meal, on vacation, or at a party/disco (Table 1).

Table 1.

Beer consumption behavior

Circumstance/event	Share [%]
Socializing with friends	23
Barbeque get-together	17
Sports event	11
Watching television/TV series/movies	10
When relaxing	8
Mealtime	8
Vacation	6
Family gatherings	5
Cultural events	4
Party/disco	4
Special events	3
Other	1

Source: own compilation.

Most commonly the respondents purchase beer at supermarkets, which is most probably due to the variety of products and promotions. The large number of supermarkets on the Polish market, in relation to other types of stores (e.g., neighborhood, convenience stores), also contributes to the more frequent purchases in those retail establishments. Nearly every second respondent (42%) drinks beer in a bar or pub. Four out of ten make their beer purchases in neighborhood stores, while the rest purchase beer in restaurants, gas stations, and other facilities (Figure 4).

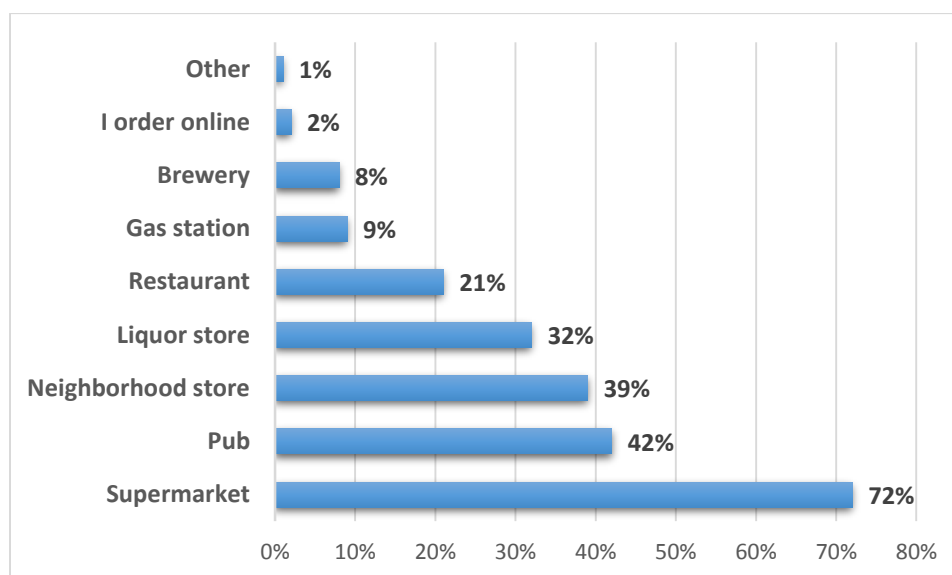


Figure 4. Place of beer purchase.

Source: own compilation.

Half of the respondents (51%) do not spend more than PLN 19 per week on beer. Only one in ten respondents (8%) spends between PLN 30 and PLN 39 per week on beer purchases. Every fourth respondent (24%) is able to spend more than PLN 39 on beer purchases (Table 2). As such, the respondent group spending significantly more money on beer purchases than the average can be targeted with a potential offer. On average, consumers spend PLN 22.76 per week on beer.

Table 2.

Weekly spending on beer purchases

Range [PLN]	Share [%]
Less than 10	25
from 11 to 19	26
from 20 to 29	17
from 30 to 39	8
40 and over	24
Total	100

Source: own compilation.

The majority of respondents (75%) prefer beer of a standard volume, i.e., 500 ml, while 20% prefer 330 ml beer. The remaining respondents choose beer size above 500 ml, e.g., 580 ml. Most respondents (83%) prefer to consume beer from a glass bottle. The respondents' belief that canned beer tastes inferior of significance (Dlaczego piwo...). Beer in a glass bottle is considered a more convenient form of the beverage. Women are more likely to choose glass bottled beer, whereas men choose canned beer.

A significant portion of the respondents (69%) choose beer within a 3.6% - 7% alcohol content range. The remainder drink beer with reduced alcohol content, while relatively few prefer beer with high alcohol content in the range of 7.1% to 10% inclusive (Figure 5).

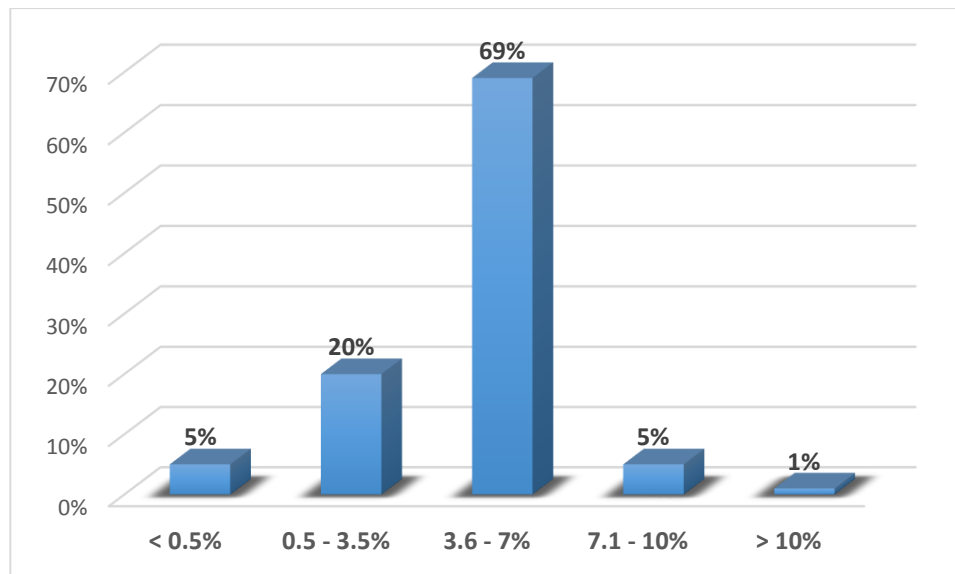


Figure 5. Most popular beer alcohol content.

Source: own compilation.

The questionnaire included questions regarding consumer awareness of beer brands on the Polish market. The respondents were unable to assess which beer brand, in their opinion, offers the highest quality, variety, and the best price-to-quality ratio. According to the surveyed, Tyskie is the most popular beer brand in terms of quality. Lech and Żywiec have been ranked marginally lower, followed by Heineken and Desperados. In the respondents' view, Lech markets the most variety of beer, while Redd's offers the least. In terms of the price-to-quality ratio, Lech and Perła were indicated most frequently. The most popular brand on the Polish market is Desperados, Somersby and Lech. (Figure 6).

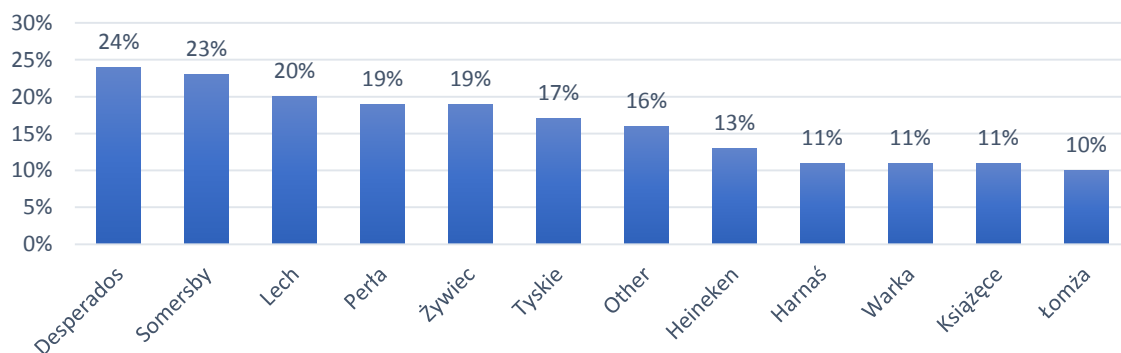


Figure 6. Respondents' most preferred beer brands.

Source: own compilation.

Three out of four (72%) respondents most commonly pick lager, which possibly indicates a preference for rather classic beer styles. Flavored beers and Indian Pale Ale (IPA) are chosen by one in two respondents (47%). The potential consumers surveyed relatively rarely choose such beer styles as Stout, Bock and Trappist (Figure 7).

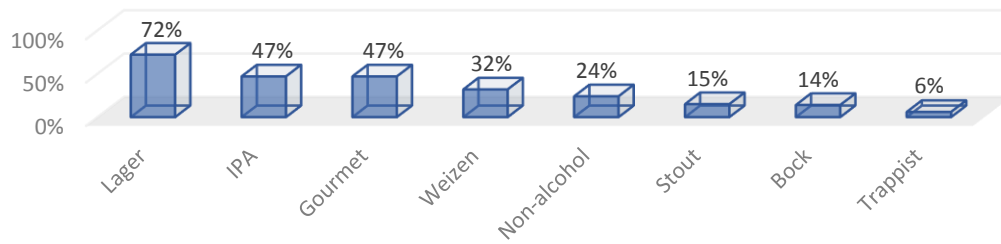


Figure 7. Respondents' most preferred beer styles.

Source: own compilation.

69% of the respondents drink craft beer, while 31% do not consume this type of beer. Flavored beer is consumed by as many as 80% of the surveyed. 73% of the respondents answered affirmatively to the question regarding drinking non-alcoholic beer (Figure 8).

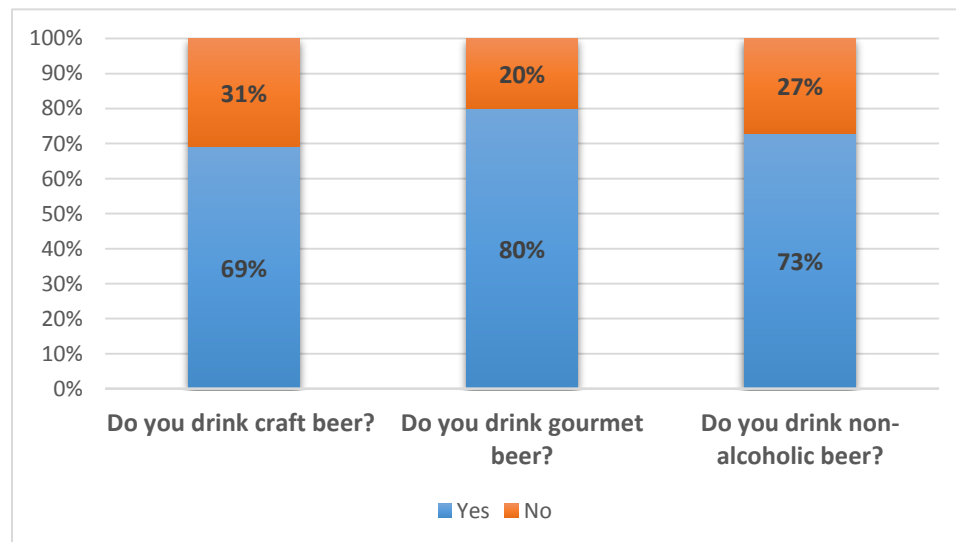


Figure 8. Craft beer, flavored beer and non-alcoholic beer consumption.

Source: own compilation.

In reference to beer flavors, 23% of the surveyed consumers mostly choose Lemon/Lime, while 15% pick beer of an equally refreshing flavor, i.e., Mojito. Every ten respondent chooses apple, honey, tequila or raspberry flavors (Figure 9).

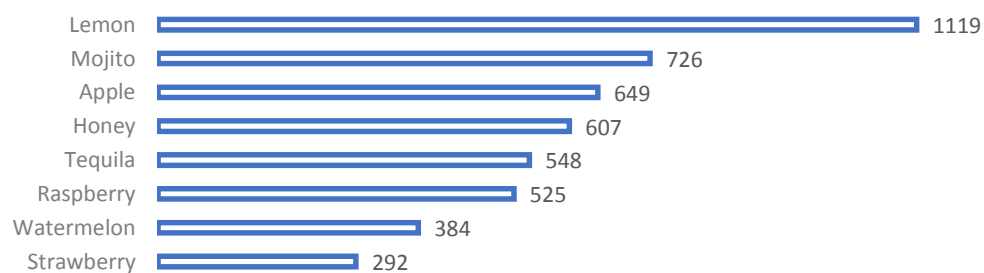


Figure 9. Most preferred beer flavors.

Source: own compilation.

The indicators analyzed represent the characteristics of an ideal beer, on a scale from 0-5, where 0 is the lowest and 5 is the highest value. Five assessment criteria were provided (aroma, color, carbonation, bitterness and alcohol content) (Figure 10).

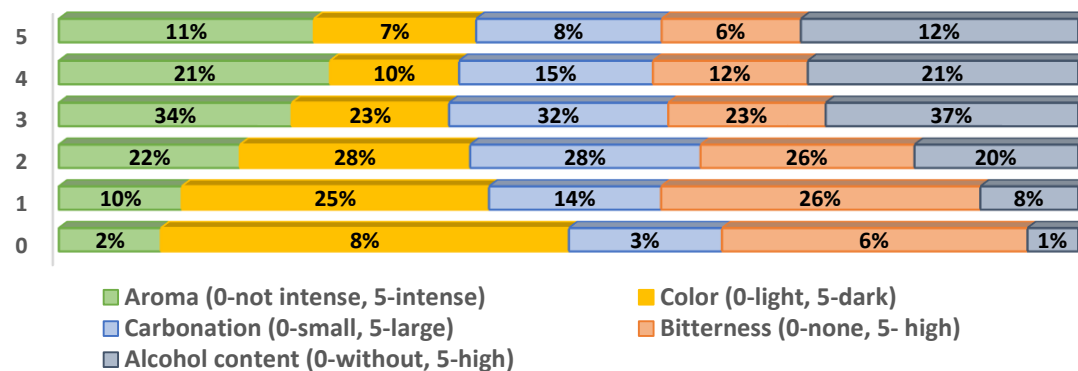


Figure 10. Ideal beer as per the respondents.

Source: own compilation.

The majority of respondents selected a good taste of beer as the most important aspect, followed by the ease of availability in stores, product familiarity, improvement in mood, value for money, natural ingredient content, eco-friendly packaging, low calorie content, and support in maintaining good health (Figure 11).

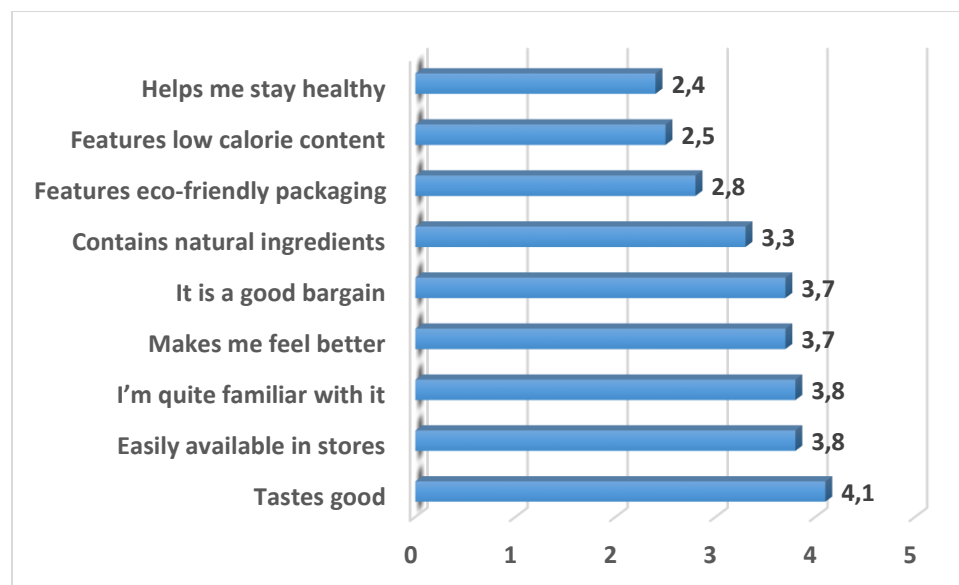


Figure 11. Beer consumption motives.

Source: own compilation.

Most respondents (58%) learn about new products from friends, or from social media and the stores where they normally buy beer (38%). The remainder obtain such information from other given sources (Figure 12).

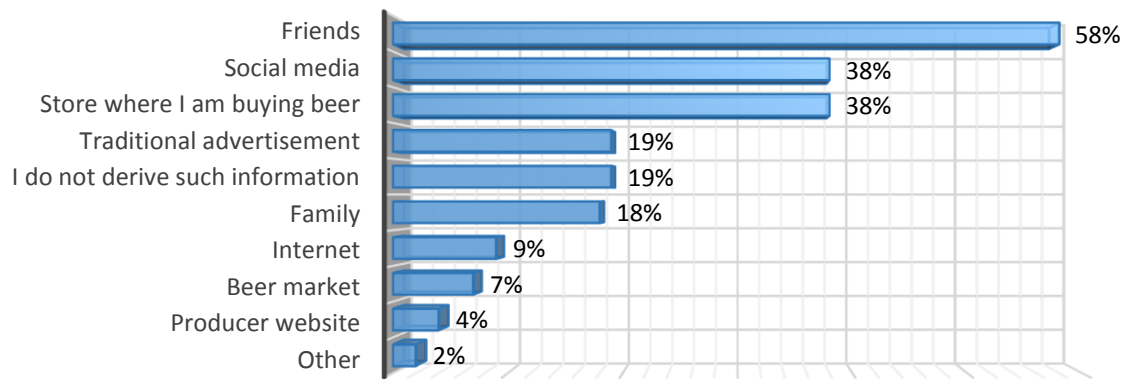


Figure 12. Sources of new alcohol product information.

Source: own compilation.

$\frac{3}{4}$ of the surveyed believe that the amount of beer brands available on the Polish market is sufficient. Every tenth respondent indicates oversaturation of the beer market in Poland. Only 16% of the consumers surveyed believe that the market has not been fully saturated (Figure 13).

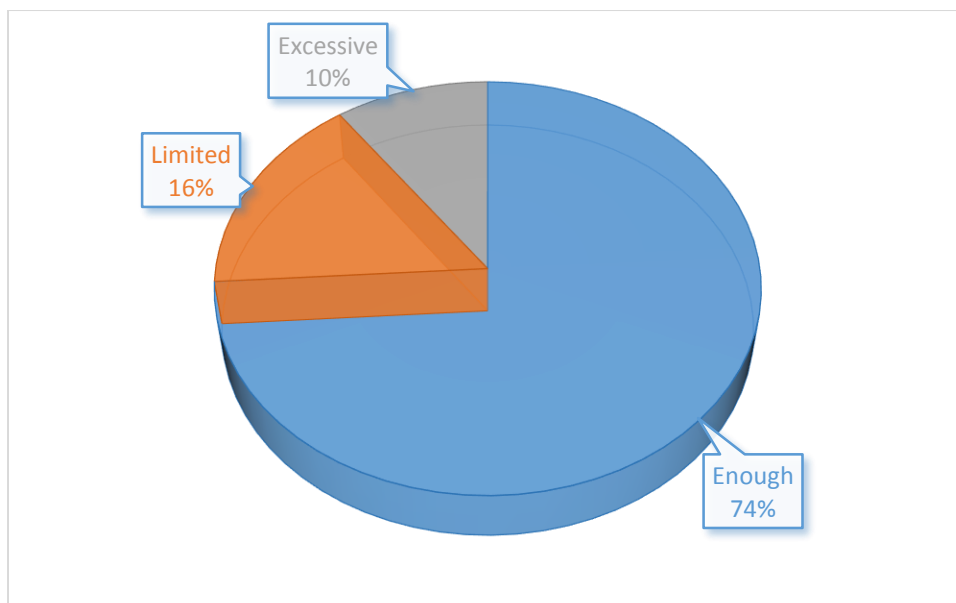


Figure 13. Beer brand availability on the Polish market.

Source: own compilation.

47% of the respondents would add unique flavors to the beer offer in Poland, 28% would incorporate more craft beer into the offer, 25% would like beer to be cheaper, while $\frac{1}{4}$ show interest in foreign beer brands. The remainder would appreciate higher aesthetics in beer appearance, an environmentally committed brand, and a larger selection of non-alcoholic beer (Figure 14).

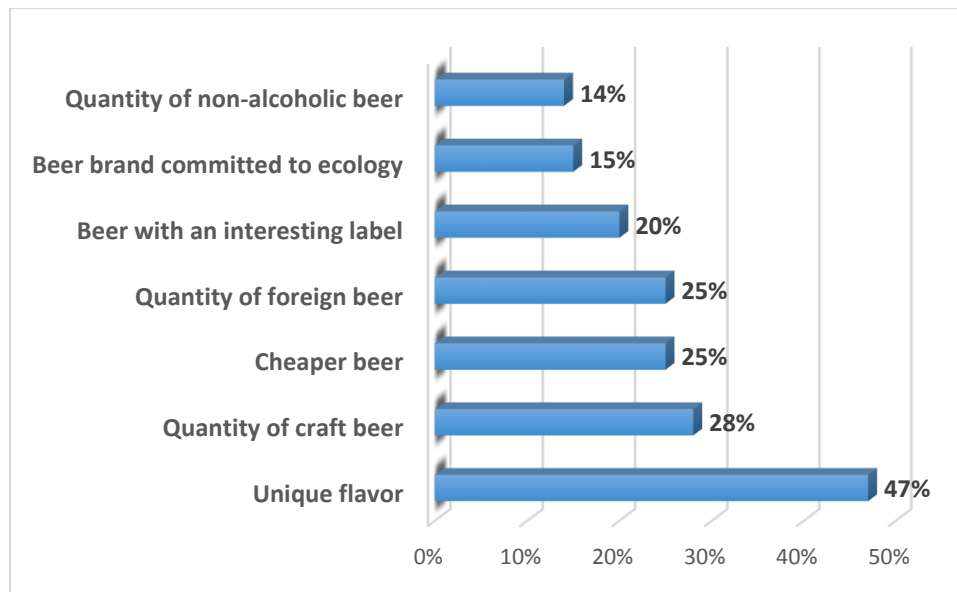


Figure 14. Beer market offer diversification

Source: own compilation.

66% of the respondents show positive attitude towards the inclusion of national symbols on the French beer's label. The most frequently selected characteristic symbols associated with France include: the city of Paris, Napoleon, the Alps/Mount- Blanc, the Côte d'Azur and Croissant. Less frequently, the respondents indicated such related associations as a kiss, champagne or Coco Channel (Figure 15). The feelings the respondents reported in association with the French beer include curiosity (58%), acceptance (36%), surprise (29%). Sadness, rejection or confusion were indicated quite rarely. Every second respondent (52%) has not consumed French beer but expresses interest in trying it. 16% of the respondents do not want to try the beer from France, while one in four respondents has no opinion in this regard. 9% of the respondents have already tried the French beer.

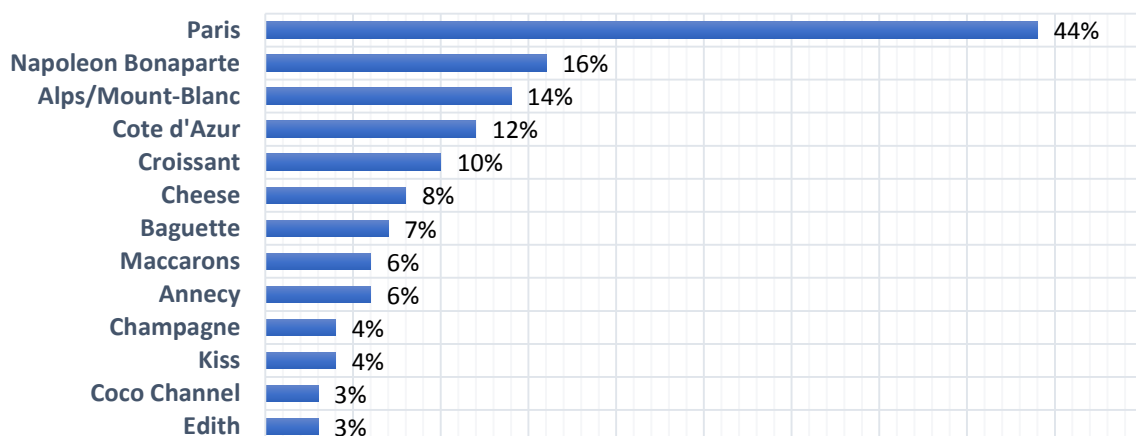


Figure 15. Beer label symbols of distinctive places/things associated with France.

Source: own compilation.

A product feature indicated most frequently by the surveyed was high price (40%). 31% responded that French beer can be of good quality, 30% considered French beer as tasty, 29% elegant, 19% aromatic. The qualities least frequently associated with French beer were cheapness, poor quality or modernity (Figure 16).

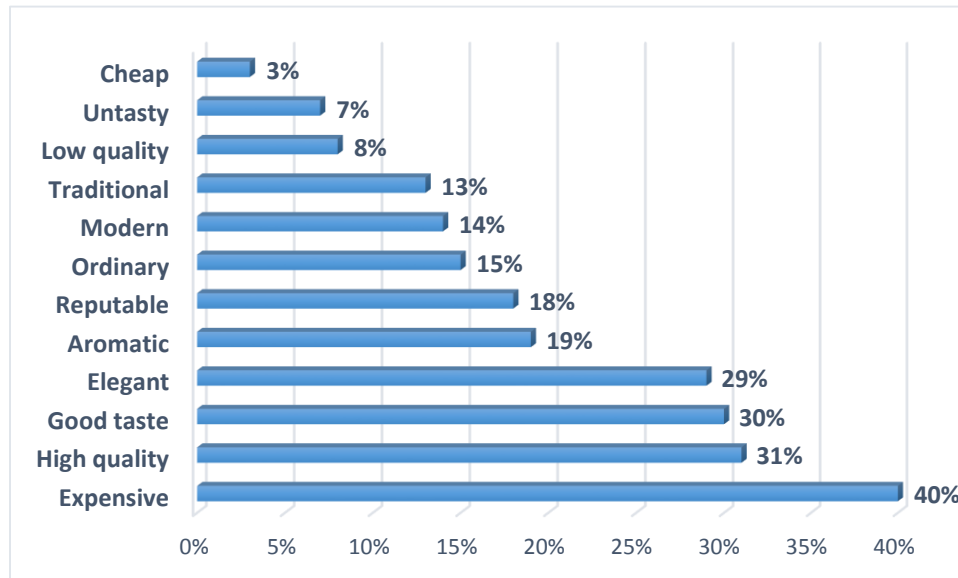


Figure 16. Characteristic features of French beer.

Source: own compilation.

The survey covered a sample of 3792 respondents, 57% of which were male (2156 persons), 42% female (1603 persons), while 1% preferred not to specify their gender. The largest number of respondents, i.e., 28% (1 077 respondents), were persons aged between 18 and 25 y/o. The next age range, i.e., 26-35 y/o, included 482 respondents (12.93%). One in five respondents (22%, 850 persons) fell within the age range of 36-45 y/o. The 46-55 y/o range consisted of 649 persons, i.e., 17% of the respondents. Precisely 400 persons made up the group of 56-65-year-olds, accounting for 10.55% in the overall structure of the sample. Respondents over the age of 65 accounted for 8.8% (334 persons). The survey covered 49% of respondents with higher education, 37% with secondary education, 7% with vocational education, 4% with basic vocational education, 2% with primary education, and 1% with junior high school education (Figure 17).

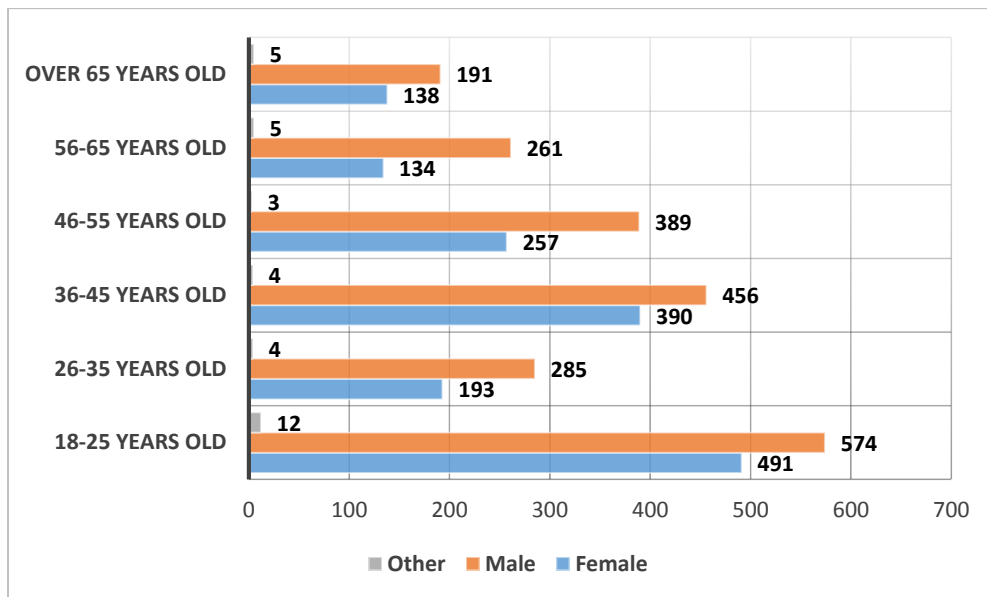


Figure 17. Respondent distribution by gender and age.

Source: own compilation.

The largest number of respondents indicated the Mazovian Province (16%) as the region of residence, followed by the Kuyavian-Pomeranian Province (12%), and the Silesian and Subcarpathian provinces (10% each). Every third respondent (28%) lives in a rural/city setting of up to 10 000 residents, 23% of the respondents live in a city of 100 000 – 500 000 residents, while 18% of the surveyed live in a city of more than 500 000 residents. A similar share has been observed with regard to the respondents living in cities of up to 50 thousand residents. The remaining 13% of the surveyed live in cities of up to 100 thousand residents (Figure 18).

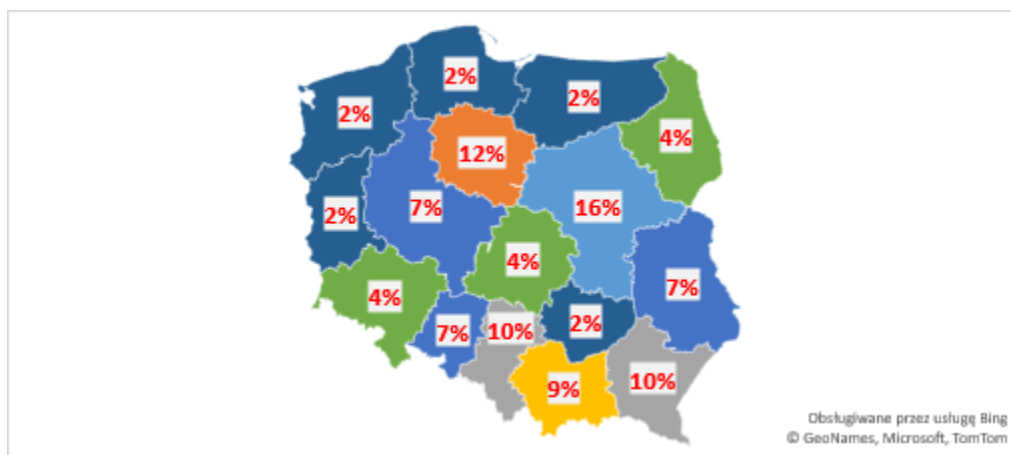


Figure 18. Respondent distribution by province.

Source: own compilation.

Taking the criterion of monthly net income into account, the structure of the respondent distribution was relatively even. The most dominant group was made up of persons with incomes between PLN 3001 and PLN 4000. Monthly income of between PLN 4001 and PLN 5000 was indicated by the smallest number of respondents (Figure 19).

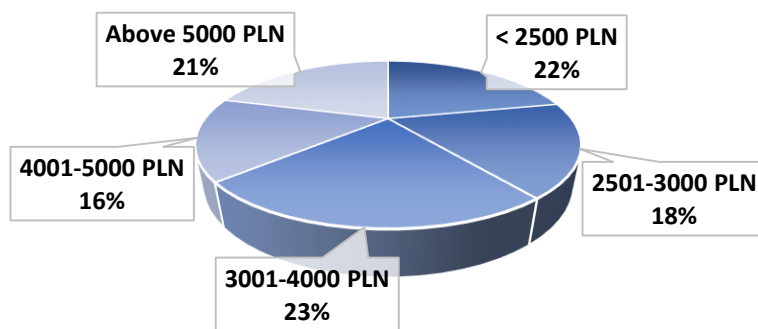


Figure 19. Respondent structure by net monthly income.

Source: own compilation.

Conclusion

The results show that, for a significant portion of Poland's population, beer is a well-known alcoholic beverage of choice. The most customary beer consumption occasions are sports and cultural events as well as family gatherings. Alcoholic beverage purchases are generally made at the largest in supermarkets, in bars and neighborhood/liquor stores. 51% of Poles spend up to PLN 19 a week on beer purchases, while 24% - from PLN 40 upwards. Most commonly, beer is consumed up to 3 times a week and 2-3 times a month. The preferred package size is 500 ml in a glass bottle, with an alcohol content of 3.6% to 7%. Poles typify Tyskie, Lech and Żywiec as beer brands of highest quality. The beer brands with the most variety and best value for money are Lech, Żywiec and Desperados. The main competition to a new beer brand launched on the Polish market will be Lech, Żywiec, Desperados, Tyskie and Somersby, which are typified as the beer brands chosen most frequently by Poles. The preferred beer styles are lager (72%) and IPA (47%), as well as flavored beer (47%). Most commonly selected flavored beer flavors are lemon and lime, mojito, apple and honey. A significant proportion of the respondents buy non-alcoholic beer occasionally. An ideal beer, according to the respondents, contains average proportions of aroma, color, carbonation, bitterness and alcohol. The factor prompting consumers to try a new beer brand is primarily taste, which accounts for 75% of the responses, followed by price (52%) and advertising (48%). Information on alcoholic beverage novelties most commonly is derived from friends or Social Media as well as the alcohol product shelves of the stores in which the respondents shop most often. 74% of the surveyed believe that the Polish market enjoys a sufficient offer of beer variety. The respondents react positively to the French beer brand; most of them are willing to try such a beer, expecting a high price, but good quality and taste as well as elegance. The label was associated with the national colors of France, the city of Paris, Napoleon and the Alps.

Based on the data indicating that alcohol consumption in Poland has increased over the past 30 years, and the fact that Poles remain among the societies characterized by the highest alcohol consumption, opening up to the Polish market is strongly recommended.

References

1. Boss, J. (2014). Piwo dawniej i dzisiaj. *Inżynieria Przetwórstwa Spożywczego, vol. 3(11)*,
2. *Carlsberg Polska, Jasne strony piwa*, <https://www.carlsbergpolska.pl/media/11541/ksi%C4%85%C5%BCka-jasne-strony-piwa.pdf>, 12.10.2022.
3. *Dlaczego piwo w puszcze smakuje inaczej?* Związek Pracodawców Przemysłu Piwowarskiego – Browary Polskie, <https://www.browary-polskie.pl/fakty-i-mity-na-temat-piwa/>, 18.05.2022.
4. Fałat, Z., Górka, R., Plinta, P., Sadownik, A.W. (2002). *Przewodnik piwosza*. Bielsko-Biała: Pascal.
5. Klimkiewicz, A., Obłąkowska, K., Bartoszewicz, A. (2021). *Polska zalana piwem. Analiza ewolucji modelu spożycia alkoholu w Polsce – przyczyny i skutki. Raport*. Warszawa: Instytut Jagielloński.
6. Lamparska, M. (2016). Krótka geografia piwa. *Acta Geographica Silesiana, Vol. 24*, <https://rebus.us.edu.pl/handle/20.500.12128/6830>, 12.10.2022.
7. Okrzesik, J. (1997). Warzenie i sprzedawanie piwa. *Gospodarka, No. 50-52*, pp. 18-24.
8. Pal, J., Piotrowska, A., Adamiak, J., Czerwińska-Ledwig, O. (2019). Piwo i surowce browarnicze w kosmetologii oraz kąpiele piwne jako forma zabiegowa. *Post Fitoter, no. 20(2)*. Warszawa: Borgis, pp. 145-153.
9. *Spoleczeństwo informacyjne w Polsce w 2021 r.* (2021). Warszawa: Główny Urząd Statystyczny; Szczecin: Urząd Statystyczny w Szczecinie.
10. Strojny, A. (2003). *Piwnym szlakiem po Europie Środką*. Kraków: Bezdroża.

SME'S COMPETITIVENESS AS THE ERDF'S PRIORITY FOR THE SUPPORT OF REGIONAL DEVELOPMENT – EVALUATION OF THE POLISH EXPERIENCE

Jarosław POTERAŁSKI

University of Szczecin, Institute of Management; jaroslaw.poteralski@usz.edu.pl,
ORCID: 0000-0002-6205-3795

Purpose: The development and competitiveness of regions constitutes one of the most crucial areas of the intervention of the European Union's structural funds. Aid to SME's and increasing their competitiveness constitute one of the main priorities of supporting the development of individual regions. The aim of the article is to summarize and evaluate Polish experiences in the use of EU funds for the needs of increasing the competitiveness of the SME sector.

Design/methodology/approach: The paper features an analysis of literature concerning the structural funds with a particular focus on the European Regional Development Fund. Additionally, the author analysed the provisions of basic strategic documents, which contain the assumptions for the implementation of the cohesion policy in Polish regions in subsequent EU budget periods over the course of 2004-2020.

Findings: Poland as well as its regions have been the beneficiaries of the EU cohesion policy for nearly twenty years, preparing strategic documents and managing aid received from the structural funds during three subsequent periods: 2004-2006, 2007-2013 and 2014-2020. For almost two decades a system of support and the implementation of its major priorities was created at a national and regional level, stipulated in operational programmes and implemented by institutions equipped with suitable competences.

Originality/value: The paper is an attempt at summarising Polish experiences in using the ERDF's aid for the purpose of raising the competitiveness of the entities in the SME sector, which was to constitute one of the main priorities of improving the competitiveness and growth of Polish regions.

Keywords: Structural funds, development of regions, competitiveness of the regions, European Regional Development Fund, SME's competitiveness.

Category of the paper: research paper, viewpoint.

1. Introduction

The development and competitiveness of regions constitutes one of the major areas of interventions undertaken by the European Union structural funds. In turn, business entities of the SME sector are the most significant beneficiaries of such interventions, both at national and regional levels. Raising SME's competitiveness became one of the main priorities specified in strategic documents at the EU, national and regional levels. Support of the SME sector became one of the most consequential tools for the development and increase of the competitiveness of EU regions, while the European Regional Development Fund serves as a fundamental instrument of support for the sector, mostly in the area of investments and innovations.

Poland as well as its regions have been the beneficiaries of the EU cohesion policy for nearly twenty years, preparing strategic documents and managing aid received from the structural funds during three subsequent periods: 2004-2006, 2007-2013 and 2014-2020. For almost two decades a system of support and the implementation of its major priorities was created at a national and regional level, stipulated in operational programmes and implemented by institutions equipped with suitable competences.

The paper is an attempt at summarising Polish experiences in using the ERDF's aid for the purpose of raising the competitiveness of the entities in the SME sector, which was to constitute one of the main priorities of improving the competitiveness and growth of Polish regions. The paper features an analysis of literature concerning the structural funds with a particular focus on the European Regional Development Fund. Additionally, the author analysed the provisions of basic strategic documents, which contain the assumptions for the implementation of the cohesion policy in Polish regions in subsequent EU budget periods over the course of 2004-2020.

2. SME's competitiveness as a priority of support to the development of regions

Cohesion policy is one of the most essential EU policies. Its objective involves promoting a harmonious development of the entire territory of the European Union through actions leading to the reduction of disproportions in the level of development of its regions, and thereby to strengthening economic, social and territorial cohesion of the European Community. Thanks to the suitable direction of the actions realized within the scope of cohesion policy, with the financial assistance of the structural funds and the Cohesion Fund, less developed regions have a chance of catching up on their growth and significantly accelerating the processes of achieving convergence with other regions and countries of the Community (Poteralski, 2011a, p. 346).

Social and economic cohesion of the European Union refers to all EU member countries, however, the essence of all the actions designed to ensure cohesion is that it is a region-oriented policy (Poteralski, 2011b, p. 97).

One of the most pivotal aims of integration is alleviation of economic disparities between old EU members and newly-accepted states or those aspiring to the Union membership. The process of reducing differences was to be achieved through the EU Cohesion Policy and Regional Policy, whose most essential tool was to be financial aid provided under structural funds (Świrski-Czałbowska, 2007, p. 92).

In the EU structural policy, in the context of raising EU regions' economic cohesion, their competitiveness is emphasised, both in terms of current diagnoses determining the directions in which the financial aid is applied, as well as in the perspective of expectations regarding its shape in the future. Competitiveness may be considered in national and regional dimensions as well as in terms of individual institutions or business entities, also entities belonging to the SME sector.

Competitiveness is recognized as a concept from the field of economics, although one should rather conclude that it is equally close to the areas of interest of management sciences. Competitiveness may be discussed in micro-, meso- and macroeconomic scopes. In a micro perspective it chiefly concerns enterprises, whereas at a macro level it concerns a state. Between these two levels one can also differentiate a meso level, where the competitiveness of industries, sectors and regions is featured. Such a broad application of the term of competitiveness has implications regarding both the understanding of the term as well as the factors that shape it (Grodzka, 2017, pp. 170-171).

One of the factors of competition between regions entails the strive to ensure proper technological, social and infrastructural conditions for the development of entrepreneurship. It is at the regional scale that many factors are shaped which may affect the operation of enterprises, such as social capital, business environment institutions, public services (Grodzka, 2017, p. 171).

Regional policy is a substantial component of the socio-economic policy conducted by Poland. The objective of the regional policy involves creating competitiveness of regions and counteracting the marginalization of certain areas in such a way so as to facilitate long-term economic growth of the country, its economic, social and territorial cohesion as well as integration with the European Union. Regional policy is a domain of public intervention that has been gaining increasingly more importance, while aid for SME's forms its part. The SME sector constitutes one of the major factors of regions' competitiveness and the pace of their economic growth. It is important that in planning the steps of a regional policy it is taken into account among development priorities. (Stachowiak, Pyciński, 2001, p. 7).

It needs to be emphasised that assistance to an enterprise provided within the framework of the EU may assume different forms, such as for instance specialist advisory services, support of business environment institutions, subsidies to start up business activity, however the actions

that evoke greatest emotions involve the ones undertaken under operational programmes, which are based on direct support of investments in the SME sector (Poteralski, 2011c, p. 154).

A region's competitiveness is stimulated through suitable actions aimed at improving the quality of life in a given area, and in particular the actions in areas such as environment protection, education, public health and safety, as well as through measures stimulating business activity, SME's growth, or the creation of a suitable investment climate. Support to small and medium enterprises is deemed to be one of the best methods of activating poorly developed regions (Stachowiak, Pyciński, 2001, pp. 11-13).

There are several forms of supporting entrepreneurs. Financial aid is a fundamental form available. Its aim is to pay for trainings, consultancy services, research and development work. Another type of aid entails simplifying legal and administrative procedures. It concerns in particular registering new business entities, applying simpler forms of taxation or enterprise auditing. Yet another kind of assistance involves supporting business environment institutions, such as information and consultancy networks for SME's, cooperation links between companies and business partners (Świrska-Czałbowska, 2007, p. 91).

The process of regional development is the result of three premises: internal ones (endogenous), external ones (exogenous) as well as reactions to external changes. Creation of development forces public authorities to exert impact on a suitable combination of factors of exogenous and endogenous nature. It entails the need for developing the right models of intervention policy. In the economic practice the effect of a chosen model typically involves the emergence of various fields of operation of small and medium enterprises (Stachowiak, Pyciński, 2001, pp. 23-24).

3. Competitiveness of Polish regions in the ERDF perspective in the years of 2004-2020

The use of aid within the framework of the EU structural funds in subsequent budgetary perspectives required that a series of strategic and programme-related documents had to be devised and agreed upon with the European Commission, both at the level of the Community, as well as at national and regional levels. However, it may be assumed that in the Polish situation the most important strategic documents at the national level included, respectively:

- in the years of 2004-2006: National Development Plan for 2004-2006,
- in the years of 2007-2013: National Strategic Reference Framework (National Cohesion Policy),
- in the years of 2014-2020: Partnership Agreement.

Those documents constituted, *inter alia*, a synthetic perspective of problem areas, they defined priorities and areas of support, they indicated the operational programmes, tools and institutions that were responsible for the planning, implementation and management of the programmes. In each of those documents one main objective was formulated along with several specific objectives, supporting the achievement of the aid assumptions within cohesion policy on the forecasted budgetary period. Those assumptions constituted a resultant of other strategic documents, determining the direction and priorities of growth in subsequent years, both at the level of the Community, as well as at national and regional levels. They were also a subject of negotiation between Polish authorities and the European Commission.

Table 1 contains a synthetic presentation of the assumptions of subsequent strategic documents, specifying the support to problem areas from the structural funds in the period of 2004-2020.

Analysing the provisions of fundamental strategic documents determining the use of aid from the structural funds in Poland in the subsequent budgetary perspectives, one can observe that the goals in the area of the main objectives have not changed significantly in the examined period. In all three periods "increasing the competitiveness of the economy" was listed in the first order. Furthermore, "improvement of social and territorial cohesion" was featured as well.

However, in the case of formulating specific objectives it can be observed that in the first of the analysed periods they were of fairly general nature and they largely referred to macro-economic and national dimension.

The first period of 2004-2006 was extremely important in building Polish experiences of using aid from the structural funds. On the eve of Poland's accession to the EU it was pointed out that the country lacked wide-ranging training and systematic education in the sphere of regional development. The effect of that was very poor knowledge of the subject both among civil servants as well as political decision-makers at all levels of territorial government, and in governmental institutions. The deficit was highly significant, considering the need for efficient and effective absorption of extensive financial aid that Poland would receive as transfers within the framework of the European Union structural funds (Józefowicz, 2001, p. 47).

Table 1.

Objectives of the strategic documents in the years of 2004-2020

2004-2006	2007-2013	2014-2020
National Development Plan	National Cohesion Policy	Partnership Agreement
Main objective/Main objectives		
Developing a competitive economy based on knowledge and entrepreneurship, capable of long-term, harmonious growth, ensuring an increase of employment and improvement of social, economic and spatial cohesion with the European Union at regional and national levels.	Creating conditions for an increase of competitiveness of an economy based on knowledge and entrepreneurship, ensuring an increase of employment and improvement of social, economic and spatial cohesion.	Increasing the competitiveness of the economy, improving social and territorial cohesion, improving the effectiveness of public administration (raising the efficiency and effectiveness of the state).

Cont. table 1.

Specific objectives		
<p>Supporting the achievement and maintenance of high GDP growth in the long-term.</p> <p>Increasing levels of employment and education.</p> <p>Including Poland into the European network of transport and information infrastructure.</p> <p>Intensifying the process of increasing the share of high added value sectors in the structure of the economy, developing information society technologies.</p> <p>Supporting the participation in developmental and modernization processes of all the regions and social groups in Poland.</p>	<p>Improving the quality of functioning of public institutions and expanding partnership mechanisms.</p> <p>Improving the quality of human capital and increasing social cohesion.</p> <p>Building and modernizing technical and social infrastructure of fundamental importance to the economy.</p> <p>Increasing enterprises' competitiveness and innovativeness, including in particular high added value manufacturing sector and developing the services sector.</p> <p>Improving the competitiveness of Polish regions and counteracting their social, economic and spatial marginalization.</p> <p>Evening out developmental opportunities and supporting structural changes in rural areas.</p>	<p>Improving the quality and internationalization of research as well as increasing the application of its results in the economy.</p> <p>Improving the competitiveness of enterprises.</p> <p>Increasing the use of ICTs in the economy and society</p> <p>Improving the competences of personnel in the economy.</p> <p>Using the resources more effectively on the labour market.</p> <p>Reducing the emissions generated by the economy.</p> <p>Improving the ability to adapt to climate change and developing risk management systems.</p> <p>Improving the effectiveness of the use of natural and cultural resources and their conservation.</p> <p>Improving the quality and functioning of the offer of the transport system and increasing transport accessibility of the country within the European network.</p> <p>Increasing the stability of electrical power and natural gas supplies.</p> <p>Improving chances for the employment of individuals affected by or being at risk of poverty and social exclusion.</p> <p>Reducing the risk of social exclusion caused by disproportions in access to services.</p> <p>Inclusion of communities residing in peripheral and degraded areas.</p> <p>Improving the quality and functioning of the offer of the transport system and increasing transport accessibility of the country within the national network.</p> <p>Improving administrative and legal conditions for economy growth.</p> <p>Increasing the use of ICTs in the economy and society.</p>

Source: own elaboration on the basis of: Poland. National Development Plan 2004-2006, Council of Ministers, Warszawa 2003, pp. 63-64; National Strategic Reference Framework (National Cohesion Strategy), Ministry of Regional Development, Warszawa 2007, pp. 40- 42; Programming of the financial perspective for 2014-2020. Partnership Agreement, Ministry of Development, Warszawa 2015, pp. 14-17.

In the National Development Plan for 2004-2006, 5 intermediate objectives were formulated and it was pointed out in the first years following Poland's accession to the European Union that the focus of the economic policy was chiefly on maintaining macroeconomic balance and financial stability (...), on limiting administrative and legal barriers to the development of entrepreneurship and conducting business activity. In the following objectives the need was stressed for, inter alia, the implementation of mechanisms that were to reduce labour costs, reduction of administrative and institutional barriers, simplification of the rules for conducting infrastructural investments, continuation of

restructuring processes and support for the most effective employment and prevention of any further deepening of spatial and social disparities (Council of Ministers, 2003, pp. 64-65).

The next budgetary perspective of 2007-2013 was the first full budgetary period comprising subsequent 7 years, and secondly it was a perspective that enabled Poland to use the experience already gained in the previous period. It was extremely important for the country and the regions, which in 2004 were only launching the entire system of planning and implementation of instruments of support within the scope of the cohesion policy. In the National Cohesion Strategy there was a distinct reference already at the level of formulating specific objectives to basic cohesion policy objectives, such as e.g. improving the quality of functioning of public institutions, improving the quality of human capital and increasing social cohesion, improving enterprise competitiveness and innovativeness. Furthermore, building and modernization of infrastructure was mentioned, including social infrastructure as well as increase of the competitiveness of regions, evening out growth opportunities and supporting structural changes in the countryside.

In the Partnership Agreement for 2014-2020 the precision with which the objectives were formulated was far greater. The document pointed out to the links between the Partnership Agreement main objectives and the Europe 2020 strategy, priority areas for support were listed, moreover, the main objectives and specific objectives were defined. Priority areas of support, defining the specific objectives presented in the document, included: environment favourable to entrepreneurship and innovations, modern network infrastructure, social cohesion and professional activity, the environment and effective management of resources, network infrastructure for employment growth (Ministry of Development, 2015, pp. 14-16).

4. Support to SME's as an objective of the cohesion policy in the years of 2004-2020

As previously mentioned, one of the areas of support provided by the structural funds involves the competitiveness of the economy, which to a large extent depends on the competitiveness of Polish enterprises. Over the course of the three European Union budgetary outlooks the priorities listed in the overriding strategic documents were realized within the scope of the so-called operational programmes. In the years of 2004-2006 the competitiveness of Polish enterprises was aided through such operational programmes as the Sectoral Operational Programme – Growth of the Competitiveness of Companies (SOP GCC) as well as measure 3.4 Microenterprises within the scope of the Integrated Operational Programme of Regional Development. In the next budgetary period of 2007-2013, the competitiveness of Polish enterprises was increased from the aid provided by the ERDF chiefly through the Operational Programme – Innovative Economy (OP - IE). At a regional level the

competitiveness of enterprises, particularly in the sector of small and medium enterprises, was supported through 16 regional operational programmes implemented and managed at the level of voivodeships (Poteralski, 2012, p. 208).

In the years of 2014-2020 the approach was continued, in line with which the cohesion policy at a regional level was supported by 16 Regional Operational Programmes, while the national programme, mostly oriented towards improving the competitiveness of Polish enterprises, involved Operational Programme Smart Growth. Table 2 contains the most important priorities and directions of the actions supporting SME's growth along with operational programmes, which provided the support with the participation of the ERDF. However, it needs to be added that apart from the programmes listed above, since 2007 the ERDF aid was also realized within the scope of separate programmes, addressed to the regions located in Eastern Poland. In the period of 2007-2013 it was the Operational Programme Development of Eastern Poland, while in 2014-2020 it was the Operational Programme Eastern Poland. They served as instruments of aid for those regions complementary to the Regional Programmes.

Table 2.

Selected priorities and operational programmes supporting SME's in the years of 2004-2020

2004-2006	Priorities/directions of actions supporting SME's development
	Supporting the competitiveness of enterprises Strengthening the growth potential of regions and counteracting the marginalization of certain areas
	Involvement of the ERDF in operational programmes Sectoral Operational Programme Growth of Economic Competitiveness (eventually the name adopted was: SOP Growth of the Competitiveness of Companies) (SOP GCC) Integrated Operational Programme of Regional Development (IOPRD: Measure 3.4.)
2007-2013	Priorities/directions of actions supporting SME's development
	Strengthening growth drivers, i.e. innovative enterprises through the creation of institutional conditions for their development, including the development of information society Supporting regional innovativeness (investment components), basic services, including tourism Growth of entrepreneurship Improvement of access to financing Supporting the growth of human resources for innovative economy
	Involvement of the ERDF in operational programmes 16 Regional Operational Programmes (ROP) Operational Programme Innovative Economy (OPIE) Operational Programme Development of Eastern Poland (OPDEP)
2014-2020	Priorities/directions of actions supporting SME's development
	Promoting entrepreneurship, in particular by facilitating economic applications for new ideas and facilitating the establishment of new enterprises, including also through business incubators Developing and implementing new business models for SME's, in particular in order to increase internationalization Supporting the creation and expansion of advanced capabilities of product and service development Promoting enterprise investments into R&D (research & development), developing links and synergies between enterprises, R&D centres and higher education sector, supporting technological and applied research, pilot lines, activities related to early validation of products and advances production capabilities and first production in key technologies.
	Involvement of the ERDF in operational programmes 16 Regional Operational Programmes (ROP) Operational Programme Smart Growth (OPSG) Operational Programme Eastern Poland (OPEP)

Source: own elaboration on the basis of: Poland. National Development Plan 2004-2006, Council of Ministers, Warszawa 2003, pp. 67-75; National Strategic Reference Framework (National Cohesion Policy), Ministry of Regional Development, Warszawa 2007, pp. 90-96; Programming of the Financial Perspective 2014- 2020. Partnership Agreement, Ministry of Development, Warszawa 2015, pp. 79-85.

In the period when the National Development Plan for 2004-2006 was in effect, the so-called Development Axes were formulated for the purpose of constructing individual Operational Programmes. Table No 2 features two of them, the first of which defined areas of support for the Sectoral Operational Programme Growth of Economic Competitiveness (later to be changed to: SOP Growth of the Competitiveness of Companies), while the second one referred to the needs of regions and was used to formulate areas of support for the Integrated Operational Programme of Regional Development (Council of Ministers, 2003, p. 68).

The latter programme was based on two funds and it supported intervention areas from both the European Social Fund (ESF) and the European Regional Development Fund (ERDF). One of the objectives of the Integrated Operational Programme of Regional Development within the area of the ERDF's competences involved building the competitiveness of regional economies through the support to the most effective and pro-development undertakings (Council of Ministers, 2003, p. 113).

The National Cohesion Strategy for 2007-2013 defined the so-called horizontal objectives, of which objective 4 "Increasing the competitiveness and innovativeness of companies, and in particular of the high added value manufacturing industry and development of the service sector" referred directly to the areas of competitiveness of enterprises, including from the SEM sector and it was reflected in relevant Operational Programmes (Ministry of Regional Development, 2007, p. 90). In the last programming period covered by this paper, the so-called thematic objectives were defined. The support of the competitiveness of the economy and its entities was provided for under Thematic Objective 1: "Strengthening of scientific research, technological development and innovations" as well as Objective 3: "Strengthening the competitiveness of SME's, the agricultural sector, fisheries and aquaculture sector". Within those objectives the programme specified areas for aid and priorities, listed in Table 2 (Ministry of Development, 2015, pp. 79-85).

The Partnership Agreement first of all specified Poland's crucial developmental challenges formulated on the grounds of an analysis of developmental needs and territorial potentials. The document assumed a significant importance of the funds that were to be managed by voivodships. It meant a greater than previously responsibility for the implementation of the Partnership Agreement objectives and it made it necessary to devise mechanisms ensuring the proper coordination of interventions. The Partnership Agreement featured an outline of the system of coordination as well as general assumptions for the division of interventions between a national and regional level, based chiefly on the subsidiary principle. Coordination between the cohesion policy funds at a regional level was ensured by the introduction of programmes based on two funds (the ESF and the ERDF), which was to be realized for the first time in the programming period of 2014-2020 by voivodeship local governments (Ministry of Development, 2015, pp. 7-8).

5. Conclusion

The European Structural Fund constitutes a uniquely important instrument of the EU cohesion policy. The main areas of the ERDF's interventions include an infrastructural dimension, competitiveness and innovativeness of business entities, including the ones from the SME sector. Improving the competitiveness of business entities constitutes a key factor in increasing the competitiveness and socio-economic cohesion of regions.

Summarising the first, nearly 20-year long experience of Poland and its regions in programming and using aid from the structural funds, including the ERDF, it needs to be emphasised that it was a period of intense efforts focused on the creation and launching of an entire system devised to support the process of absorbing the aid provided under the structural funds. It was particularly evident in the first period of 2004-2006.

Decentralization was a crucial factor determining the efficiency of absorption of the aid for the regions, both in terms of programming as well as managing aid. Observing the process of strategic documents formulation and the competences of individual institutions responsible for the management and implementation of operational programmes, one could conclude that in the analysed period a significant progress became notable in that area. Both in the aspect of recognizing needs (programming), as well as managing signs of such decentralization, the introduction of the financial perspective of 2007-2013 was a breakthrough moment with its 16 regional operational programmes, clearly responding to regional needs, the programmes supporting regions in Easter Poland. This trend was maintained also in the period of 2014-2020. It meant that the involvement of funds managed by voivodships was on the rise.

In the following budgetary periods it became evident that an evolution started in the programming of support for SME's. On the one hand, the ties between growth and competitiveness of micro, small and medium enterprises and the main areas of the ERDF's interventions, including objectives at regional and national levels, were adequately formulated. In the first period of 2004-2006 the aid was largely concentrated on stopping unfavourable phenomena at macro- and meso-economic levels, furthermore, the objectives were in a way directly reflected in operational programmes with a limited consideration of their complementarity, but also demarcation. It was decidedly more clearly defined in the periods when regional operational programmes were in effect.

References

1. Grodzka, D. (2017). Konkurencyjność polskich regionów na tle regionów państw członkowskich UE. *Studia BAS, Nr 1(49)*.
2. Huczek, M. (2008). Wspieranie rozwoju małych i średnich przedsiębiorstw przez Unię Europejską na przykładzie Małopolski. *Zeszyty Naukowe Wyższej Szkoły Humanitas. Zarządzanie. Nr 2*.
3. Józefowicz, A. (ed.) (2001). *Koncepcja polityki rozwoju regionalnego w perspektywie akcesji Polski do Unii Europejskiej*. Warszawa: PARP.
4. Ministerstwo Rozwoju (2015). *Programowanie perspektywy finansowej 2014-2020. Umowa Partnerstwa. Projekt po zmianach wynikających z uzupełnienia zapisów o EFRM oraz po negocjacjach programów operacyjnych*. Warszawa: Ministerstwo Rozwoju, Departament Koordynacji Strategii i Polityk Rozwoju.
5. Ministerstwo Rozwoju Regionalnego (2007). *Narodowe Strategiczne Ramy Odniesienia (Narodowa Strategia Spójności)*. Warszawa.
6. Poteralski, J. (2011a). Support for the Innovativeness of Polish Economy Quoting the Example of Innovative Economy Operational Programme. *Transformations in Business & Economics, vol. 10, No. 2A(23A)*. Brno-Kaunas- Riga-Vilnius: Vilnius University.
7. Poteralski, J. (2011b). Wsparcie innowacyjnych inwestycji w Regionalnym Programie Operacyjnym Województwa Zachodniopomorskiego. In: T. Bernat (ed.), *Gospodarka-Przedsiębiorstwo-Człowiek*. Szczecin: ZAPOL.
8. Poteralski, J. (2011c). Wsparcie inwestycyjne mikroprzedsiębiorstw na przykładzie Regionalnego Programu Operacyjnego Województwa Zachodniopomorskiego. In: I. Ostoj, S. Swadźba (eds.), *Spoleczno-kulturowe uwarunkowania funkcjonowania rynków i przedsiębiorstw*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego.
9. Poteralski, J. (2012). Wsparcie konkurencyjności zachodniopomorskich przedsiębiorstw w Regionalnym Programie Operacyjnym Województwa Zachodniopomorskiego. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania, nr 25*.
10. Rada Ministrów (2003). *Polska. Narodowy Plan Rozwoju 2004-2006*. Warszawa.
11. Stachowiak, M., Pyciński, S. (ed.) (2001). *Małe i średnie przedsiębiorstwa a rozwój regionalny*. Warszawa: PARP.
12. Świrski-Czałbowski, K. (2007). Wykorzystanie funduszy strukturalnych dla sektora małych i średnich w Polsce po akcesji do Unii Europejskiej. *Studia i Materiały Wydziału Zarządzania UW, Nr 1*.
13. Zawodziński, K., Bartoszczuk, P. (2013). Atrakcyjność inwestycyjna a konkurencyjność regionu. In: H. Godlewska-Majkowska (ed.), *Atrakcyjność inwestycyjna regionów Polski na tle Unii Europejskiej*. Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej.

PROMOTION MANAGEMENT OF THE REGION ON THE EXAMPLE OF SELECTED LOCAL INITIATIVES

Agnieszka PREDYGIER

Jan Kochanowski University in Kielce; agnieszka.predygier@ujk.edu.pl, ORCID: 0000-0003-3283-2592

Purpose: The aim of the article was to answer the following questions: Does the promotion of local initiatives influence the popularization of the region? How does the cooperation of inter-organizational stakeholders affect the development of the region? How do local initiatives promote the Świętokrzyskie region? What is the role and importance of stakeholders in creating local initiatives? What are the effects of inter-organizational relations in the described examples of local initiatives?

Design/methodology/approach: The article uses the case study research method, which seems to be interesting and little known local initiatives to promote the Świętokrzyskie region, and refers to the concept of regional management in terms of the "blue ocean strategy" (e.g. building relationships and inter-organizational cooperation).

Findings: The article presents examples of good practice used by municipal managers in the Świętokrzyskie region. These examples best reflect the competitive success of the implemented "blue ocean" strategies based on cooperation between stakeholders, searching for common values and building inter-organizational relationship networks as a key element of competitive advantage.

Practical implications: Managers of the region can apply a blue ocean strategy based on regional partnership, building inter-organizational relationship networks and inter-organizational collaboration. When creating a new strategy, mayors, starosts and marshals should apply actions to increase competitive advantage.

Social implications: A strategy based on the values of partnership and cooperation consists in: observing alternative strategic solutions of other regions, educating them, applying various strategies, reprogramming the thinking of the local society (e.g. not only communication routes are important, but also ecological behaviours), creating solutions favourable for the development of the municipality (e.g. a common sewage treatment plant, health resort), each of which will have the benefit of creating new solutions, accepting innovations, distinctive features, shaping external trends (e.g. the Park of Miniature World Buildings in Krajno).

Originality/value: The article is recommended to region managers (mayors, starosts, marshals) who are looking for a strategy to increase the region's competitiveness. The article constitutes an innovative solution for the application of the "blue ocean strategy", which so far has been described only in the case of enterprises. The article is a guide for "region managers" who build a strategy of competitiveness based on inter-organizational cooperation and activate stakeholders to create local initiatives. The competitive success of two local initiatives in the Świętokrzyskie Voivodeship is for them a source of research, analyses as well as a guide to good practice. The article presents the implementation of the "blue ocean strategy" in an original way, by promoting the role of the region's stakeholders.

Keywords: promotion management of the region, stakeholders as change leaders, local initiatives, inter-organizational relations.

Category of the paper: Studies, point of view.

1. Introduction

The impact of modern technology, know-how, which force the adaptation of competitive strategies or the development of new ways, methods, techniques to win an increasingly demanding customer. Nowadays, the marketing strategy is not just about finding ways to satisfy the customer's needs, it is also about beating competitors, gaining favourable relationships, establishing new rules of the market game (Doyle, 2003; Kaplan, Norton, 2010).

New competitive strategies of enterprises, in which managers propose to abandon products in favour of modern solutions, seem to be gaining more and more fans (Google, Apple, General Electric, Boeing, ABB). Managers and analysts of modern brands (Coca-Cola) emphasize the contribution of marketing to creating value for shareholders. "Marketing is a management process focused on maximizing returns for shareholders by creating relationships with valued customers and creating a competitive advantage" (Doyle, 2003, p. 35).

Marketing has always been a social process, a philosophy of modern man, because its influence includes: managers, customers, partners, communities, competitors, employees, relations between them, building a network of international relations, that is, it includes the so-called transnationalism of international corporations, as described by Ph. Kotler (Kotler, Jatusripitak, Maesincee, 1997).

Today, the approach to region management is also changing, hence the article describes the process of attractive changes in terms of local initiatives (Klamut, 2014; Kożuch et al., 2018). Global requirements, opportunities and threats force a change in the approach to municipal, district and voivodeship management. The management of the region cannot be based only on administering the area and fulfilling legal norms. The key element is the diversification of the competitive development of the areas, management of their development, disproportions in their development demonstrate the need for managerial skills. Nowadays, a mayor, staroste or marshal is not only a representative of the local self-government in the area. The region's managers are knowledgeable, educated people who solve regional problems related to the specificity of managing a given local society on a daily basis. "Regional managers", as they should be called, not only manage budgetary funds, but are responsible for acquiring new external funds (e.g. European funds), undertaking investments with a view to the future of the municipality, powiat or voivodship. The area managers implement the strategy of the region's competitiveness by fulfilling the needs of the local community, acquiring funds for them, as well as being responsible for the implementation of the strategy to the society, which can

evaluate their work and recall them by expressing dissatisfaction during elections (Pakulska, 2012; Romanowski, 2008). The region's managers carry out their task, not as officials, but behaving like managers who can be dismissed for managerial inefficiency in an enterprise (dismissed after elections). Therefore, it is appropriate to call mayors, starosts, voivodship marshals "managers of the region", because they are responsible for generating profits in the form of meeting social needs, they also bear the risk of being dismissed if their competences are deemed insufficient by the local society to achieve the effects of local task implementation. Thus, a theory of governance today best fulfils the task of managing the competitiveness of the region (Klamut, 2014).

The theory of governance (Pawłowska, 2016) has created the concept of the "manager of the region" ("new public management") who seeks the most effective methods of promoting his/her region, products, in order to meet local needs by implementing the most effective strategies of competitiveness. The global world has rediscovered the old truth that "in unity is strength", "two heads are better than one". All these slogans implement the idea of cooperation, which can be a key competitive advantage of the region. Today, the old competitive advantages (cheap raw material, cheap labour, destructive competition) are ruining the world. The answer to the needs of the modern world is a strategy of inter-organizational cooperation, which eliminates the strategy of destructive competition and introduces partnership and value innovation. "Value innovation is created in an area where the company's activities positively affect both the cost structure and the value offered to buyers. Cost savings are made by eliminating and reducing these factors, which cause the intensification of competition in the industry. Buyer value is increased by bringing in and creating items that the industry has not previously offered. Over time, there is a further reduction in costs due to economies of scale achieved as the scale of the sales volume of what generates the highest value increases" (Chan Kim, Mauborgne, 2005, p. 36).

Building a modern competitive advantage strategy by managers of the region should involve a shift from a destructive competitive strategy to a cooperation strategy known as the "blue ocean strategy". Traditional forms of competition required: focusing on building a competitive position within a strategic group, better service to petitioners, maximizing the offer of values distinguishing the region, offering low-cost products and services, deepening functional and emotional orientation in the local society (practicality, relations with culture, history), spatial adaptation to a changing and uncertain environment, observing trends and immediate reactions. These were tiring and ineffective activities for local authorities. Competing in a modern region involves the following key elements: becoming aware of the distinctive features of the region, identifying the most advantageous forms of promotion and advertising, building a marketing strategy, creating communication and relations with participants of the market game in the region. The success of formulating a competitive strategy process depends on the skills of regional managers, such as:

- the ability to build the involvement of the local society (activation, formulation of clear expectations, education, awareness-raising),
- the ability to build appropriate attitude, trust and loyalty towards strategic goals presented by local managers,
- the ability to create expected behaviours, e.g. activity, voluntary cooperation, acceptance for goals, understanding the common good, commitment to the social good, emotional acceptance of good practice,
- the ability to implement the strategy, i.e. moving from "thoughts to actions", that is, implementing the established strategic goals in line with the expectations of the local society.

Therefore, the development of the region depends on the skills of the manager dealing with abilities, attracting investors for cooperation, the ability to create beneficial partnerships and cooperation of local change leaders (Bojar, Olesiński, 2007). Involving investors from various organizations in inter-organizational cooperation supports the local system of changes, builds a new quality of inter-organizational relations (Olesiński, 2010), which translates into the effects achieved for the region and its society. Some of the benefits that occur in the cooperation of science organization, business support organisation, local government and local entrepreneurs are presented below, i.e. creating local innovation systems.

The article presents synergistic effects resulting from inter-organizational cooperation in the region between various stakeholders. Support for the region's competitiveness can be achieved through the implementation of specific innovative projects that are the result of cooperation between many local organizations. These initiatives are key elements that distinguish the region from others and reflect the identification and attractiveness of local communities. The grassroots origin of these initiatives and the identification of the local society with these undertakings constitute the strength of the region's competitive advantage. The use of such initiatives by local managers represents their key management competences. Individual case studies from the Świętokrzyskie region of initiatives that constitute a structure for promoting and supporting the region's development are proposed below.

2. The case study of the Bałtów Tourist Complex

The founder of the first Jurassic dinosaur park in Poland was the Delta Association. The Bałtów Tourist Complex was created by including other tourist attractions over the years: Bałtów Zoo, Amusement Park, 5D Cinema of Emotions, Rollercoaster, Prehistoric Oceanarium, Horse Riding Centre "Kraina Koni", Witches Village "Sabatówka" or Poland in Miniature. Thanks to efficient and effective management methods and the ability to build inter-organizational relations in the marketing strategy, the venture operates all year round. In winter,

tourists can use the "Szwajcaria Bałtowska" Ski Station, and the youngest visitors can visit the Santa Claus Village. The organizers provided a full complex of guest services by providing accommodation for over 100 people in a nearby agritourism farm, 5 guest houses and numerous catering points, mini restaurants. JuraPark is an undertaking to promote the Ostrowiec Świętokrzyski region in the Świętokrzyskie Voivodeship through the strategic use of historical and palaeological assets, as well as the image of the Świętokrzyskie Mountains as the oldest in Europe. The inter-organizational cooperation of the Bałtów Commune Office, the Delta Association, the Association for the Development of the Bałtów Commune "Bałt", Jan Kochanowski University in Kielce with the discovery of dinosaur traces in 2001 by Gerard Gierliński, PhD and professor Zbigniew Kotański contributed to the emergence of this initiative. Thanks to the help of the organizational strategy, Bałtów Jurassic Park has been operating since August 7, 2004 on an area of 100 ha and its promotional strategy based on the cooperation of many entities provides the most diverse entertainment area in Poland in terms of attractions. DLF Invest Sp. z o.o. has been the co-founder of the Bałtów Tourist Complex since December 2017. Managing the promotion strategy of the organization, taking into account inter-organizational relations, ensures the development of the organization and "clustering" (Predygier, 2020), i.e. the natural expansion of activities in the manner of clustered organizational forms. The success of one venture creates a synergistic effect of creating other activities that use the common promotional success strategy. The Delta Association, having successfully established the JuraPark, created a similar project in the Kuyavian-Pomeranian Voivodeship (JuraPark in Solec Kujawski), JuraPark Krasiejów (near Opole), PaleoSafari Moab Giant in the USA in the state of Utah.

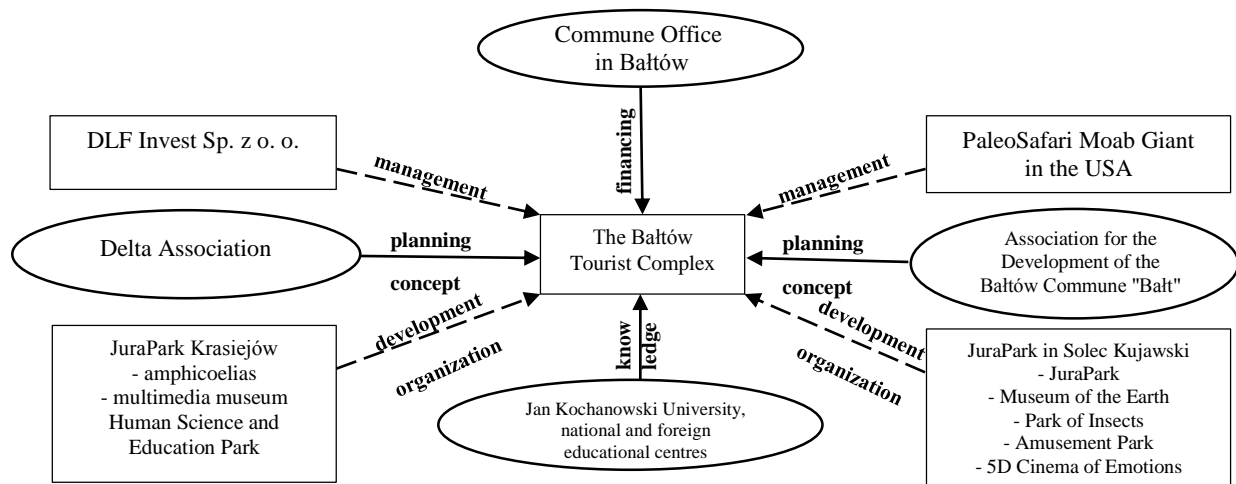


Figure 1. Managing the promotion of the Bałtów Tourist Complex in terms of inter-organizational cooperation of stakeholders.

Source: Own study.

The diagram presents the process of creating a successful strategy for the creation and promotion of the Bałtów Tourist Complex with multiple tourist attractions. The success of managing the promotion of a venture depends on the managerial skills of building inter-

organizational cooperation and the involvement of local authorities with a governance perspective (Pawłowska, 2016) based on promoting the area through the participation of stakeholders, interest in the world of science, domestic and foreign business, and involving in the initiative the inhabitants who can become local leaders of change through their actions in the association and simple sympathy for the local venture carried out in the municipality.

3. A case study of the promotion strategy of Sandomierz through a film

Managing the promotion of the region through modern forms of public communication (film) was applied in the case of the city of Sandomierz. According to estimates, about 80,000 tourists visited Sandomierz in 2008 (Diagnosis of the state of tourism in ..., 2020). Compared to 2020, taking into account the use of accommodation and ticket sales, Sandomierz was visited by approximately 300,000 people per year. The research also shows that 64% of respondents indicate television as the most common source of information and encouragement to visit Sandomierz (Szpara, Musz, 2016). In 2015, comparisons were made between the effectiveness of the promotion of Sandomierz and the Świętokrzyskie Voivodeship in relation to the film "Father Matthew" versus other forms of paper and online advertising in financial terms. The research shows that if the city wanted to buy such an advertisement, it would have to spend about PLN 7 million on it only in one half of the year, and even so, the effect of this ad would be poor compared to the success of the film (Szpara, Musz, 2016). Currently, Sandomierz spends tens of thousands of zlotys a year for this, but taking into account the costs of advertising this returns the city about 14 million a year. In 2009, the rules on product placement in films were not in force and it could not be done directly, the television made a condition to find money to continue film production. At the time, the Regional Tourist Organization and the Marshal's Office of the Świętokrzyskie Voivodeship co-financed the third and fourth part of "Father Matthew". The value of the share of the Sandomierz City Hall was PLN 1.5 million, which was enough for 20 episodes (Szpara, Musz, 2016). The management of the promotion of the city through the film has expanded its activity to the entire Świętokrzyskie Voivodeship, as well as to towns such as: Kielce, Bałtów, Opatów, Krzyżtopór Castle, Busko Zdrój, Kurozwęki, where the film takes place. The integral part of the series features the name "Sandomierz" and the inscription "Świętokrzyskie" below it. The success of the competitive strategy of promoting the city through the film therefore includes the synergistic effect of involving other organizations in this success. Eight years of cooperation has influenced the development of tourism, an increase in the development of a small business base, an increase in the number of hotel and agritourism facilities, an increase in the number of private accommodation (their number increased to about 1000 accommodation places in Sandomierz alone), which brought the promotional success of Kazimierz on the Vistula (Diagnosis of the state..., 2020; Faracik 2017; Szpara, Musz, 2016). Promotion management has involved other

macroregions, e.g. Subcarpathian Voivodeship with Tarnobrzeg, Baranów Sandomierski, Stalowa Wola, with which joint initiatives are implemented. The promotion strategy of the city of Sandomierz includes continuous development. The Sandomierz Wine Trail may be a tourist attraction. Sandomierz has extremely good conditions for vineyards. White wines are rated by connoisseurs as better than Spanish wines. You can stay overnight in the vineyard, educate yourself about wine production and taste wine, which is conducive to the promotional activities of the city. Orchards, used for tourist activities, are another attraction of Sandomierz resulting from the promotion of traditional activities in the area. The Sandomierz Apple Trail allows to advertise the potential of fruit farms, which provides customers for the agricultural sector and the development of tourism industry. The wine and orchard trails have been provided with agritourism activity, which may provide accommodation and food facilities for tourists, as well as become an idea for starting a business. Managing the competitiveness of the development of the city of Sandomierz through an effective marketing strategy provides benefits to other tourist attractions around Sandomierz, e.g. promotion of the Krzyżtopór castle in Ujazd, which attracts nearly 160,000 visitors annually (Faracik, 2017). The analysis of the case study of the promotion of the city of Sandomierz shows that the beneficial phenomenon of "clustering" takes place here (Predygier, 2020), i.e. the effect of synergistic benefits transferred between organizations joining the common promotion strategy. Another attraction of Sandomierz is a bicycle route connecting five voivodeships of Eastern Poland. The increase in bicycle traffic is connected with new ecological trends, promotion of a healthy lifestyle and reduction of smog. The project is carried out with the participation of 5 other voivodeships that share the same problems (unemployment, low living standard of the inhabitants), which they have been trying to solve by implementing a strategy of inter-organizational cooperation in the promotion of the region.

The originators of the strategy to promote the city of Sandomierz through a TV series were: Marshal's Office of the Świętokrzyskie Voivodeship, Sandomierz City Hall, Telewizja Polska S.A. These institutions have become leaders and stakeholders in managing the promotion of the city of Sandomierz through the film. The Regional Tourism Organization used the idea of the series for promotional activities, along with the development and competitive strategies of the project being joined by other organizations from the Świętokrzyskie and Podkarpackie voivodeships. Residents of the communes of the Świętokrzyskie and Podkarpackie voivodeships, who, thanks to tourist attractions, could develop gastronomic and hotel activities for the benefit of the city and the voivodeship, became the stakeholders. The success of the promotion strategy of the city of Sandomierz is based on the involvement of residents in the implementation of the idea and their activation, thanks to which the initiative developed by implementing other projects such as: the Sandomierz Wine Trail, the Sandomierz Orchard Trail, and the Sandomierz Bicycle Trail (Faracik, 2017; Szpara, Musz, 2016). Managing the promotion of the city of Sandomierz through the promotion strategy has been successful thanks to the cooperation of many stakeholders from the Świętokrzyskie Voivodeship as well as other voivodships.

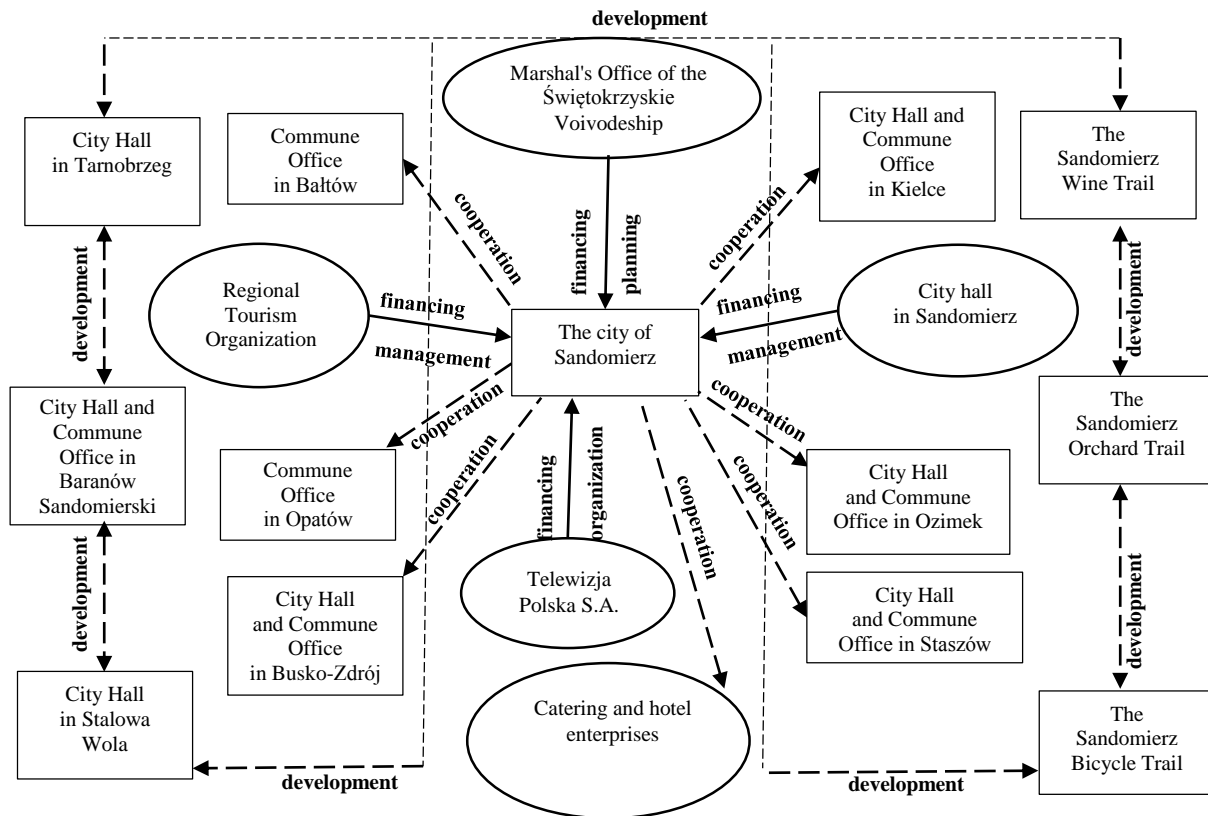


Figure 2. Managing the promotion of the City of Sandomierz in terms of inter-organizational cooperation of stakeholders.

Source: Own study.

4. Summary

Increasingly, the winners in global markets are not those who offer low prices or incur increasing capital expenditure, but those who offer new values, solutions to old products or well-known brands. Proposing new applications for old products (Vinted app), activities favouring the protection of the natural environment (Alior Bank's biodegradable Visa card), or educating the society (e.g. learning to segregate waste) seems to be the right concept, widely accepted by the society, hence the popularity of such commercials and activities of the organizations implementing them.

The case study analyses and evaluates two selected local initiatives of the Świętokrzyskie Voivodeship.

Nowadays, regions build their image and plan their development by using the promotion of local initiatives created in inter-organizational cooperation. The article describes two examples of selected local initiatives that have an impact on image building and the development of inter-organizational relations in the Świętokrzyskie region. The analysis and evaluation of the promotion management of the region in the case study described in the article show that the

promotion of local initiatives increases the popularity of the region by increasing its tourist value and is a valuable tool for enriching local societies through the development of enterprises (gastronomy, hotel industry) in practice. By implementing the concept of governance, local authorities should foster the image of a region open to innovation, promotion and development of local initiatives. The promotion of local initiatives is the basis for involving local society, building knowledge about the region and creating bonds, inter-organizational relations, which in turn is conducive to the development of the region and the implementation of strategic goals.

References

1. Bojar, E., Olesiński, Z. (2007) *The emergence and development of clusters in Poland*. Warsaw: Difin.
2. Chan Kim, W., Mauborgne, R. (2005). *Blue ocean strategy*. Warsaw: MIBiznes.
3. *Diagnosis of the state of tourism in the Świętokrzyskie Voivodeship* (2020). ARC Kielce: Marshal's Office of the Świętokrzyskie Voivodeship, p. 25.
4. Doyle, P. (2003). *Value Marketing*. Warsaw: FELBERG S.A.
5. Kaplan, R., Norton, D.P. (2010). *Implementation of strategies to achieve competitive advantage*. Warsaw: PWN.
6. Klamut, E. (2014). Environmental protection costs versus farms. In: D. Dziawgo, G. Borys (eds.), *Accounting for sustainable development. Economy - ethics – environment. Research Work of the University of Economics in Wrocław, No. 329* (pp. 152-160). Wrocław: Publishing house of the University of Economics.
7. Kotler, Ph., Jatusripitak, S., Maesincee, S. (1997). *The Marketing of Nations*. Krakow: Publishing house of the Professional Business School.
8. Kożuch, B., Magala, S., Paliszkievicz, J. (eds.) (2018). *Managing public trust*. Cham: Palgrave Macmillan.
9. Olesiński, Z. (2010). *Managing inter-organizational relations*. Warsaw: Economy Management Series, H.Beck Sp. z o.o.
10. Pakulska, T. (2012). Direct competitiveness of the region and the development of entrepreneurship. In: H. Godlewska-Majkowska (ed.), *Investment attractiveness as a source of entrepreneurial competitive advantages*. Warsaw: SGH.
11. Pawłowska, A. (2016). Governance as a theoretical approach - a few contentious issues. *Politics and Society*, 3(14). Rzeszów: Publishing house of the University of Rzeszów, pp. 5-17.

12. Predygier, A. (2020). Analysis and evaluation of the development potential of entities in selected Świętokrzyskie clusters. In: E. Sobczak (ed.), *Regional and local conditions for the development of the Polish economy* (pp. 89-100). Wrocław: Publishing house of the University of Economics in Wrocław.
13. Romanowski, R. (2008). Preferences of internal recipients of the territorial offer as a premise for differentiating marketing activities of local government authorities. *Scientific Notebooks of the Poznań University of Economics*, 108. Poznań: Publishing house of the University of Economics, pp. 73-90.

DYNAMIC CAPABILITIES IN TERRITORIAL MARKETING – THE POSSIBILITIES OF CONCEPT ADAPTATION

Anetta PUKAS

Wroclaw University of Economics and Business, Faculty of Management, Department of Marketing;
anetta.pukas@ue.wroc.pl, ORCID: 0000-0001-6318-2516

Purpose: The purpose of this paper is to develop a conceptual understanding of territorial marketing using the dynamic approach and explore the Dynamic Marketing Capabilities that extend the place's competitive advantage.

Design/methodology/approach: This paper has taken a conceptual approach to provide an analytical conceptualisation of Dynamic Marketing Capabilities and to guide future studies in territorial marketing. This article introduces a novel dynamic approach towards Territorial units, adopting a view based on the relationship between the dynamic capabilities view and place marketing. The primary method of the research was a critical analysis of the literature

Findings: Although there is already extensive literature on Dynamic Capabilities in strategic organizational management, there is the lack of research on this concept in the Territorial Marketing knowledge field. Which indicates a knowledge gap and research gap. The Dynamic Marketing Capabilities for territory was proposed as the result of the conceptual analysis.

Originality/value: The paper identify a gap in the conceptual thinking about implementation Dynamic Capabilities concept in territorial marketing. The analysis of the literature allowed the author to notice that the subjects related to concept of DMC in territory units are still being elaborated, but can be adopted.

Keywords: Dynamic Marketing Capabilities, Territorial Marketing, Place Marketing.

Category of the paper: Conceptual paper.

1. Introduction

Territorial competitiveness has become a topic of great importance at the beginning of the third decade of the 21st century. The competition between the territories and the geographical areas is the main reason for the application of such tools, which, in dialogue and multidisciplinary approach, sees the essential need for a definition of new models of local, territorial systems and models of territorial planning and management, giving different values for all stakeholders.

The application of standard business techniques and methodologies to a territory and its manifestation is increasingly becoming an ongoing topic within cultural and academic debates (Bencardino, Napoletano, 2003; Jovanovska-Boshkovska, Poposki, 2018), but also within government activities on the territory given the increasing importance of the policies for territorial development concerning the processes of social and economic growth at all administrative levels: from municipal, regional to national level (Jovanovska-Boshkovska, Poposki, 2018). This application aims to identify tools and approaches that are considered valid as Dynamic Capabilities concept. Therefore, the focus is placed on the applicability and usefulness of the marketing concept in the formulation and implementation of the strategies for local and regional development and in the direction of building the dynamic approach that will enable the performance of the newly created needs of the territories and actors on the territories.

Territorial marketing is increasingly more crucial in modern economies and societies, considering globalization, the increased connections and interdependencies between regions, the growing tourism activities, and the developing economic needs (Zbucea, 2014). Territorial marketing, as a process supporting the management of a territorial unit, becomes a prerequisite for running an effective spatial planning policy (Jovanovska-Boshkovska, Poposki, 2018). Therefore, applying marketing tools and capabilities in coordination with the territorial development strategies is a fundamental postulate today to improve the process of development of the territories.

The aim of this paper is to develop a conceptual understanding of territorial marketing using the dynamic approach and explore the Dynamic Marketing Capabilities that extend the place's competitive advantage.

The in-depth study of the literature showed that despite the already quite extensive number of publications regarding Dynamic Capabilities in the scope of strategic management, yet the research into this concept within the science of marketing remains fragmentary and scattered (Barrales-Molina, Martínez-Lopez, Gázquez-Abad, 2014). Therefore the subject of Dynamic Marketing Capabilities is highly pertinent and vital bearing in mind the highly dynamic changes in the market environment, technological changes and competitive advantage of companies in the 21st century (Chen et al., 2022). Although there is already extensive literature on Dynamic Marketing Capabilities in strategic organizational management, there is the lack of research on this concept in the Territorial Marketing knowledge field. This article attempts to contribute to the theoretical development of place/territory marketing by discussing the link between the Dynamic Capabilities approach and place development. It is argued that a better understanding of the Dynamic Capability approach is a possible way forward for place/territory marketing theory. How Marketing Dynamic Capabilities are conceptualized significantly affects how modern marketing activity develops the territory.

2. Territorial Marketing - state of the art

The knowledge on the territorial marketing of regions and cities has become increasingly popular and considerably influences the economic success of and living standards in particular local government units. At a time of solid inter-territorial competition, the success in territorial strategic planning depends largely on their capacity to formulate and renew their competitive advantages in a shorter period. The economic growth and failure of certain regions appear to result from their ability to develop and rebuild their portfolios of internal and external relations (Jovanovska-Boshkovska, Poposki, 2018). Territorial marketing is increasingly more crucial in modern economies and societies, considering globalization, the increased connections and interdependencies between regions, the growing tourism activities, and the developing economic needs (Zbucea, 2014). Territorial marketing, as a process supporting the management of a territorial unit, becomes a prerequisite for running an effective spatial planning policy in the area of a commune. The use of marketing concepts may help the territory to attract tourists, entrepreneurs and investors, and inhabitants who may find that to live, study and work, in this locality might be advantageously and even prestigiously. It may be related to both the big and the small territories (Azena, Keiss, 2009).

The existing studies have analyzed this field from different perspectives and in the literature, there are many and different definitions of the territorial marketing. Some authors assume that the territorial marketing becomes developed on regional level, taking into consideration the specifics of the region. Others pay attention only to the image development of the territory, including the cities, places, destinations; they are convinced that it helps to attract entrepreneurs and inhabitants or tourists (Azena, Keiss, 2009). Shahabadi et al. (2019) identify place marketing as how the place communicates its offerings, a market-driven process, using marketing techniques, satisfying the needs of target markets (short- to mid-term process - campaigns), demand-driven, outward focused.

There are place marketing, destination marketing and city marketing as research concepts in the literature. Place marketing may also be referred to as overall range of actions undertaken and focused on attracting investors, tourists, residents to a particular region, as well as the construction of favourable external image aimed at the quality improvement of local community living standards (Clark et al., 2010). Another attitude to place marketing presents it as the set of techniques and activities applied by local and regional organizations and communities in the process of local development project planning and covering economic, urban, social cultural and tourism sectors, as well as the identity oriented one (Raszkowski, 2014). Place marketing is now recognized as a pedestal for the development, sustainability, and longevity of any tourism places (Kumar, Panda, 2019). Thus, the concept of place marketing not only evolved as the pivotal component of travel, tourism and hospitality research (Fyall et al., 2012), it is also related to the development of strategies and performance of activities in the extremely competitive and fierce business of alluring tourists to a particular place (Pike, Page 2014).

City marketing is a way to introduce a city or region and is not a new phenomenon in the world of marketing; this concept was implemented several decades ago by cities around the world applying marketing techniques to improve and adopt the philosophy of marketing to operationalize and achieve strategic goals (Kavaratzis, 2007). City marketing uses ideas, concepts and tools in marketing to promote a city or a region (Asnawi et al., 2018). City marketing improves the position of a city when compared to other cities. Currently, most cities in Europe have applied city marketing strategies. The strategy applied varies, ranging from city-to-city marketing to campaigns with attractive slogans, designs and logos in the media (Asnawi et al., 2018).

Destination marketing refers to a strategic approach to place development in the tourism framework. In this context, the economic and cultural interests of local communities, local businesses, and tourists are considered. The actors involved are also very diverse. Destination marketing could lead to the development of a strong destination brand (Kolb, 2006).

To ensure general development of the territory, tourism/destination marketing should be integrated into a more comprehensive strategy of place marketing (Baker, Cameron 2008). And this place marketing strategy should be correlated with the territorial marketing strategy of the wider region and various components of its management (Bagautdinova et al., 2012).

When considering marketing in territorial unit, a broader strategy to attain competitive advantage has to be considered (Baker, Cameron, 2008). The literature in the field of territorial marketing tends to describe it, especially in attracting investments and tourism development, from the perspective of the local public administration (Temperini et al., 2012). To have an effective territorial marketing strategy, not just the concepts of place branding and destination marketing must be considered, but also others, such as place experience or identity and value.

Territorial marketing activities are undertaken by different types of entities, including local government units and non-governmental, public, private, group and individual entities. Consistent activities and the mutual cooperation of all marketing initiators and animators in a given area facilitate more effective and efficient achievement of set goals (Renigier-Biłozor, Biłozor, 2015).

Govers and Go (2009) specify that various public or private actors create the ‘promise of value’ and the ‘worthwhile experiences’ at the location. Many of these organizations do not necessarily aim for the benefit of the region/destination but for their own benefit. Secondly, they would aim for benefits for the region as a whole and all stakeholders involved. Therefore, the organization – in most cases governmental – which designs and implements a destination marketing/branding strategy has to consider this aspect, as well as that the actual success of the strategy dramatically depends on all these other independent actors and stakeholders.

It also has to be considered that destination marketing involves managing a wide variety of interactions of a destination with its environment, investment, trade, social, and media issues.

Territorial marketing, as a strategy aiming to develop a specific region, has become a natural element to be incorporated into the economic development of regions (Rainisto, 2003). It integrates activities of developing an area's critical assets and promoting them outwards. The main results are attracting investments (not just in tourism or other commercial endeavors but also in cultural and social domains), developing an appealing image, and increasing internal cohesion and economic functionality (Zbuceha, 2014). To be effective, territorial marketing has to follow some basic principles, which are the cornerstones of strategic planning (Zbuceha, 2014):

- **Sustainable development:** This principle ensures not just the territory's economic development but provides long-term opportunities for progress. The resources of a territory have to be used to meet human needs primarily – both of present and future generations -and to guarantee the environment's protection.
- **Community-oriented:** To protect and promote local interests, a territorial marketing strategy has to be concerned with the values, needs, and wants of local communities. Ideally, it will stimulate the engagement of the local communities (in most cases, manifest through their representatives and active members organized as nonprofit associations).
- **Heritage promotion:** Heritage is an essential part of modern society. It is not relevant just for the cultural elite but also for local communities. Heritage could be the base for sustainable development; it supports social reflection and intercultural dialogue. In most cases, heritage promotion is coordinated by heritage management and/or those designing the territorial marketing strategy.
- **Economic stakeholders' involvement:** Effective local development means sound economic development. Thus economic organizations are vital stakeholders in this process. Without their involvement, long-term development and competitive offer are impossible to achieve.

The competition between the different territories or the geographical areas, in which the parts are divided, is the main reason for the application of such tools, which, in dialogue and multidisciplinary approach, sees the essential need for a definition of new models of local, territorial systems and models of territorial planning, through giving different values on the geographical areas.

In its aspect of competitive advantage construction, place marketing may be understood as an integrated set of instruments or activities resulting in higher competitiveness of the defined and utilized space with reference to other territorial units of this kind (Raszkowski, 2014). The following factors of competitiveness can be referred to as major ones in the context of place marketing (Raszkowski, 2014):

- socio-economic environment featuring high efficiency in solving developmental problems of a territorial unit,
- the functioning of enterprises or organizations characterized by the above-average absorption of innovative solutions, as well as creating innovative solutions in the course of their functioning,
- spatial availability of a territorial unit,
- the quality of life in a community with particular emphasis on the area of social infrastructure,
- intensified activities for the benefit of unfavorable demographic processes stabilization and improvement,
- high quality of public services,
- the condition of natural environment, the potential of natural resources,
- pro-innovative and modern methods for a territorial unit management by self-government authorities,
- major economic entities investing in the area of a territorial unit in the context of attracting more investors and constituting the form of investment recommendation.

In conclusion, it should be said that meaningful territorial marketing activities can increase the territory's competitive advantage and attract local and foreign subjects to the region by creating an expressive image and maximal use of the territory's natural, material and technical as well as financial, labor, and social resources (Grinberga-Zalite, Hernik, 2017). This is particularly justified due to the dynamics of changes in territorial units and their surroundings. Therefore, it seems to be particularly important today, from a competitive advantage perspective of activities undertaken in the area of place marketing, to adopt and implement the concept of Dynamic Capabilities.

3. Dynamic Capabilities concept – organizational and territorial perspective

During the first two decades of the 21st century, there have been numerous publications regarding the status of the resources-based theory (RBV), its development, revitalization, and critical trends, as well as scientific research on the implementation of this approach in other disciplines of science (Della Corte, D'Andrea, 2017). It is also scientifically essential to check how this concept can be used in the activities of territorial units.

Based on the resource-based view of the firm (RBV), which is interested in understanding how competitive advantages are achieved by focusing on the internal resource base of an organization (Eisenhardt, Martin, 2000; Freiling, 2001), the dynamic capability view (DCV) extends this perspective by focusing on situations of rapid and unpredictable change in dynamic

markets (Teece, Pisano, Shuen 1997). The approach based on resources (RBV) does not however explain in full the creation of competitive advantage in the more complex and evolving conditions in the environment because of its merely static character (Priem, Butler, 2001; Danneels, 2008; Bingham et al., 2015). In effect of developing a 'classical' RBV school of thought, a stream of discourse emerged centered on Dynamic Capabilities (DC) (Helfat, Peteraf, 2003). A dynamic approach to an organization suggests that the analysis and assessment of company activities should focus on the process of changes linked to the active use of the company's resources and not on the use of resources that are just owned by it and are not actively and adequately used. In the literature survey, the author discovered that a practical consequence of that approach is the change in the range of the analyses and research, leading to a relatively clear division between dynamic and static approaches. Thereby, Dynamic Capabilities are generally understood as competencies that integrate, build and reconfigure internal and external knowledge to compete in dynamic environments and build a competitive advantage (Teece, Pisano, Shuen, 1997). The capability to adjust these competencies and resources is assumed to be with the firms' managers (Eisenhardt, Martin 2000, Puderbach et al., 2017).

The concept of Dynamic Capabilities, according to its authors D. Teece, G. Pisano, and A. Shuen, assume that the competitive advantage of an organization results from its Dynamic Capabilities, which are interpreted as the ability to adapt, integrate and reconfigure the internal and the external resources and competences in reaction to the fast-changing environment. Additionally, these capabilities are difficult to reproduce and are homogenous and durable (Teece, Pisano, Shuen, 1997). According to the authors of the DC approach, competitive advantage is not generated by the resources which the company owns or controls (statically), but mainly by the capabilities of obtaining and integrating them (dynamically) (Morgan et al., 2009), which may become a source for creating value and competitive advantage (Eisenhardt, Martin, 2000; Nguyen, Pham, Freeman, 2022; Teece et al., 1997).

The publications still shows several inconsistencies in the identification of company's Dynamic Capabilities. The clearest version of DC conceptualization describes them as the tools which companies may use to manage their existing resources and to regroup them in order to create their new configurations (Teece, 2007).

Literature analysis shows that within the management research area, Dynamic Capabilities are primarily analyzed with regard to for-profit organizations and, in particular, single organizations as a unit of analysis (Puderbach et al., 2017). Instead, there is an increasing interest in public organizations as well (Pablo, Reay, Dewald, 2007; Piening, 2013). This research has the potential to refine the focus on focal firms, as in the public sector, usually more than one actor is involved when it comes to facing challenges or tasks, for example, in the case of managing a city, it is not only the mayor leading a city by hierarchical order (Puderbach et al., 2017). Instead, it is also the citizens living in the city, policy-makers, for-profit, non-profit and public organizations involved in enacting a city's management (Fligstein,

McAdam, 2012; Müller-Seitz et al., 2016). Moreover, as Pablo, Reay, and Dewald (2007) state, we do not know much about the specifics of Dynamic Capabilities in the public management sector especially in territory unit. Puderbach (2017) took up this topic by researching the city and using a case study analysis, but scientific research in this area is still incomplete. Therefore, the difficulty in adapting the DC concept in territorial units is the need to coordinate the Dynamic Capabilities of all participants/stakeholders in building the place's competitive advantage.

4. Dynamic Marketing Capabilities of the Territory - considerations and discussion

The literature analysis showed that the existing body of work confirms the clear connection between RBV and marketing theories. This relation is identified with the existence of an effective and constant company's competitive advantage obtained owing to the use of the organization's resources and marketing skills (Slotegraaf et al., 2003; Song et al., 2007; Vorhies, Morgan, 2005). The in-depth study of the literature showed that despite the already quite extensive number of publications regarding Dynamic Capabilities in the scope of strategic management, yet the research into this concept within the science of marketing remains fragmentary and scattered (Barrales-Molina, Martínez-Lopez, Gázquez-Abad, 2014) Therefore the subject of Dynamic Marketing Capabilities is highly pertinent and vital bearing in mind the highly dynamic changes in the market environment, technological changes and competitive advantage of companies in the 21st century.

The importance of marketing capabilities in the DC structure results from their role in generating knowledge about customer needs, competitive products, and distribution channels (Barrales-Molina et al., 2014; Zohourian, Rahimnia, Nabizadeh, 2022), as well as their importance in achieving better results by the organization (Cacciolatti, Lee, 2016; Kachouie, Mavondo, Sands, 2018).

Authorship of the phrase "Dynamic Marketing Capabilities" is credited to the team Bruni and Verona (2009). According to these authors, Dynamic Marketing Capabilities are: human capital, social capital and manager knowledge - involved in creating, using and integrating market knowledge and marketing resources in order to adjust to market and technological changes (Bruni, Verona, 2009). Term Dynamic Marketing Capabilities have changed and evolved towards understanding it as a subset of the Dynamic Capabilities of the organization (Bruni, Verona, 2009), with a unique role in the use of market knowledge and creating value for the customer (Fang, Zou, 2009).

Areas and topics of conceptual research on Dynamic Marketing Capabilities concerned the conceptualization of DMC, the contribution of DMC to marketing practice or proposing new approaches (e.g. outside-in) to clarify the relationship between DC and marketing. The undertaken empirical research concerned issues such as: the development of DMC in international joint ventures, the use of DC to improve investment decisions in CRM, the importance of dynamic marketing capabilities in achieving sales effects, the role of dynamic marketing capabilities in the relationship between customer knowledge management and the effects of product innovations or explaining the mechanism of linking DMC to organizational performance (Barrales-Molina et al., 2014). Hassani and Mosconi (2021) argues that firms with little dynamic capabilities to enhance organizational performance face many survival challenges.

Although there is already extensive literature on Dynamic Marketing Capabilities in strategic organizational management, there is the lack of research on this concept in the Territorial Marketing knowledge field. Which indicates a knowledge gap and research gap. Researchers are still looking for ways to combine marketing and Dynamic Capabilities in new sectors (eg. public sector) and organizations however, the scope of this research in the area of marketing of territorial units is still small.

Regions are no longer autarchic, no matter how many resources they may have. They depend increasingly more on national and international developments, on their inner dynamics, on their stakeholders' involvement, as well as on their external relationships (Zbucnea, 2014). Therefore, the competitiveness of a territory depends less and less on its natural resources and increasingly on the creative and innovative ability of local economic actors (social entrepreneurs) to make the most of its existing potential (Santos, Bernardino, 2016).

Therefore, it seems necessary to adapt the dynamic approach for territory development. Few studies can be found in this regard. Dameri and Ricciardi (2015) identify three Dynamic Capabilities of a smart city as examples: (a) sustainability, or the ability to avoid over-exploitation of resources, (b) robustness, or the ability to return to equilibrium after a crisis, and (c) agility, or the ability to evolve and adapt.

The Chong (2018) views citizen engagement as part of the sensing component and voice of the citizen analytics as part of the seizing component of a smart city model. Like any other organization, a city can also sense, seize, and transform. A smart city has Dynamic Capabilities because it leverages its resources to sense opportunities and threats in its internal and external environment, seize opportunities to pursue its goals, align the goals with its existing natural, social, economic, legal, regulatory, and administrative environment and transform itself to move closer to those goals. According to this author the existence of Dynamic Capabilities makes the smart city a knowledge organization because it uses its resources and processes to create new knowledge, disseminate it through the smart city organization, and embody it in products, services, and systems in the form of tacit or explicit knowledge (Chong, 2018)

Therefore, what is the dynamic Marketing capability of the territory, and how can it generate opportunities for building the competitive advantage? Analyzing the conceptual scope of individual DMC definitions, it can be seen that while their common feature may be the emphasis on market knowledge as the central element of DMC, the generic structure of this construct is radically different. This may be due to the function assigned to Dynamic Marketing Capabilities by individual authors but also to researchers' more general understanding of dynamic organizational capabilities. In table 1. the definition, functions and structure of Dynamic Marketing Capabilities for the for territory was proposed as the adaptation of DC concept.

Table 1.

Definition, function, and structure of the DMC in the organization and territory

Item	Dynamic Marketing Capabilities	
	Organization	Territory (<i>own adoption and proposition</i>)
Defintion	Integrated organizational processes that establish, combine and configure market resources to identify, create and deliver customer value. These processes include market perception (including recognition of the environment and absorption of knowledge), flexible decision-making and coordination functions, and response to customer needs (including marketing communication) (Li, 2015).	Integrated organizational and governance processes that establish, combine, and configure a territory's tangible and intangible assets to identify, create, and deliver value to all stakeholders and actors. These processes include market perception (including recognition of the environment and absorption of knowledge), flexible public and commercial decision-making functions and their coordination, and response to the needs of stakeholders (including marketing communication).
Function	The highest value for the customer in response to market changes (Fang, Zou, 2009).	The highest value for the stakeholder's in response to market and territory changes.
Elements/Structure	<ul style="list-style-type: none"> - Demand management - Market knowledge creation - Brand building - Customer Relationship Management (CRM) (Maklan, Knox, 2009). 	<ul style="list-style-type: none"> - Demand management for territorial products (tourism, investment, etc.) - Creating market and environment knowledge - Building a territorial brand - Stakeholder relationship management

Source: own proposition based on: Zhang, Conchar, Li, 2017, 901-912; Barrales-Molina, Martínez-López, Gázquez-Abad, 2014, pp. 399.

The functions attributed to Dynamic Marketing Capabilities are focused on transforming existing marketing resources in such a way that the resulting new combinations of these resources better correspond to the market environment conditions (Morgan, 2012). However, these Dynamic Marketing Capabilities structure consists of one or more elements. According to literature sources, DMC is, for example, only the development of new products, market learning, reconfiguration of resources, and strengthening of capabilities. Maklan and Knox (2009) presented the broadest and most comprehensive structure and identified four main Dynamic Marketing Capabilities: (1) Demand management - generating revenue for goods and services. (2) Market knowledge creation - generate and disseminate company-wide knowledge about consumers, markets, competitors, environmental trends, distributors, partners, and communities. (3) Brand building - creating and maintaining brands of products, services, and organizations. (4) Customer Relationship Management (CRM) - developing the way

a company builds relationships with customers. For the territory DMC can be adopted as: (i) demand management for territorial products (tourism, investment, etc.), (ii) creating market and environment knowledge, (iii) building a territorial brand, (iiii) stakeholder relationship management.

The lack of a commonly accepted definition of Dynamic Marketing Capabilities (DMC) and the different structures of this construct lead to the conclusion that there is no order and detailed description in terms of identifying the epistemological foundations of the concept of Dynamic Marketing Capabilities.

It can be concluded that a territorial unit has dynamic abilities because it uses its resources to detect opportunities and threats in its internal and external environment, use opportunities to achieve its goals, adjust goals to the existing natural, social, economic, legal, regulatory and administrative environment and transform to get closer to these goals. The use of the marketing perspective and the creation of Dynamic Marketing Capabilities allows each territorial unit to use its resources and processes to create a competitive advantage.

5. Conclusions

Due to globalization, territory and regions are facing fierce competition where the developing places are now competing with well-established old places. A rational visitor or investor seeks a place whose various facets of comforts, economic and political stability can meet their personal and distinct requirements (Hanna, Rowley, 2008). Place marketing plays an important role in the process of territorial development and building the competitive advantage. We live in a period of growing awareness of territorial marketing strategies not only to promote the territory as a tourist destination but also to attract investments and promotion of companies located in the territory and their products.

The successful implementation of DC concept and the emergence of Marketing Dynamic Capabilities in territorial units management, are the key drivers of increasing the competitive advantage.

The existing definitions enable us to see that Dynamic Capabilities determine the speed and the degree to which individual resources of companies can be established and regrouped about the conditions and opportunities in their environment. Hence, they generate long-term above-average (positive) results. Yet the critics of this concept point out that examining Dynamic Capabilities is difficult, and the connections between the Dynamic Capabilities and the company result in the long run is still an area of a knowledge gap. As shown in the literature, the empirical experience of scientists in this aspect still remains in its early stages, which means there are many open paths for research and possibilities of filling that exploratory gap. Thus the paradigm of research in Dynamic Capabilities is still relatively new.

To sum up, it can be said that the concept of dynamic capabilities (DC) already inspires many scientists in marketing and other areas such as city management or spatial planning. However, in terms of the undertaken research areas, there is still a lack of a comprehensive ordering of the content and concepts of the concept of dynamic capabilities concerning the paradigms of modern marketing. However, this requires further research, both of a conceptual and empirical nature, which will allow for the contribution and new quality not only to the development of knowledge about marketing at the academic level but also to create the advantages of the applicability of this knowledge also in the field of territorial units where the DC concept can be adopted. In the end, the recommendations can be presented for territory policymakers in the field of recognizing and supporting, also administratively, the use of marketing capabilities in building competitive advantage of territories in dynamic times. Indicating the next steps in scientific research, the need to set and empirically verify hypotheses regarding the differences between the dynamic characteristics of marketing capabilities of territorial areas and profit-oriented organizations should be mentioned.

References

1. Amy, P.L., Reay, T., Dewald, J.R. (2007). Identifying, Enabling and Managing Dynamic Capabilities in the Public Sector. *Journal of Management Studies*, 44.5, 687-708.
2. Asnawi, A., Kartini, D., Afiff, F., Rufaidah, P. (2018). City marketing: Scale development and measurement indicators applicated to Maluku province-Indonesia. *Cogent Business & Management*, 5, 1, 1525827.
3. Azena, L., Keiss, S. (2009). Specifics of Territorial Marketing Strategy Planning. *European Integration Studies*, No. 3, pp. 165-173.
4. Bagautdinova, N., Gafurov, I., Kalenskaya, N., Novenkova, A. (2012). The Regional Development Strategy Based on Territorial Marketing (The Case of Russia). *World Applied Sciences Journal*, 18 (Special Issue of Economics), 179-184,
5. Baker, M.J., Cameron, E. (2008). Critical success factors in destination marketing. *Tourism and Hospitality Research*, 8(2), 79-97.
6. Barrales-Molina, V., Martínez-Lopez, F.J., Gázquez-Abad, J.C. (2014). Dynamic Marketing Capabilities: toward an integrative framework. *International Journal of Management Reviews*, Vol. 16, No. 4, 397-416.
7. Bingham, Ch.B., Heimeriks, K.H., Schijven, M., Gates, S. (2015). Concurrent learning: How firms develop multiple dynamic capabilities in parallel. *Strategic Management Journal*, no. 36(12), 1802-1825.

8. Bruni, D.S., Verona, G. (2009), Dynamic marketing capabilities in science-based firms: An exploratory investigation of the pharmaceutical industry. *British Journal of Management*, no. 20, 101-117.
9. Cacciolatti, L., Lee, S.H. (2016). Revisiting the relationship between marketing capabilities and firm performance: The moderating role of market orientation, marketing strategy and organisational power. *Journal of Business Research*, 69/12.
10. Chen, Y., Luo, H., Chen, J., Guo, Y. (2022). Building data-driven dynamic capabilities to arrest knowledge hiding: A knowledge management perspective. *Journal of Business Research*, 139, 1138-1154.
11. Chong, M., Habib, A., Evangelopoulos, N., Park, H.W. (2018). Dynamic capabilities of a smart city: An innovative approach to discovering urban problems and solutions. *Government Information Quarterly* 35, 682-692.
12. Dameri, R., Ricciardi, F. (2015). Smart city intellectual capital: an emerging view of territorial systems innovation management. *Journal of Intellectual Capital*, 16(4), 860-88.
13. Danneels, E. (2008). Organizational antecedents of second-order competences. *Strategic Management Journal*, May, vol. 29, iss. 5, 519-543.
14. Della Corte V., D'Andrea, C. (2017). The state of art of Resource-Based Theory in marketing research. *The Marketing Review*, vol. 17, no. 3, 283-306.
15. Eisenhardt, K.M., Martin, J.A. (2000). Dynamic Capabilities: What are they? *Strategic Management Journal*, no. 21(10-11), 1105-1121.
16. Fang, E.E., Zou, S. (2009), Antecedents and consequences of marketing dynamic capabilities in international joint ventures. *Journal of International Business Studies*, Vol. 40, No. 5, 742-76.
17. Fligstein, N., McAdam, D. (2012) *A Theory of Fields*. Oxford: Oxford University Press.
18. Fyall, A., Garrod, B., Wang, Y. (2012). Destination collaboration: A critical review of theoretical approaches to a multi-dimensional phenomenon. *Journal of Destination Marketing & Management*, 1(1-2), 10-26.
19. Govers, R., Go, F. (2009). *Place Branding. Glocal, Virtual and Physical Identities, Constructed, Imagines and Experienced*. London: Palgrave Macmillan.
20. Grinberga-Zalite, G., Hernik, J. (2017). Territorial Marketing in the Baltic Sea Region Port Cities. *Journal of Social Sciences*, No. 1(9), 35-44.
21. Hanna, S., Rowley, J. (2008). An analysis of terminology use in place branding. *Place Branding and Public Diplomacy*, 4(1), 61-75.
22. Hassani, A. Mosconi, E. (2021). Competitive intelligence and absorptive capacity for enhancing innovation performance of SMEs. *Journal of Intelligence Studies in Business*. 11(1), 19-32.
23. Helfat, C.E., Peteraf, M.A. (2003). The Dynamic Resource-Based View: Capability lifecycles. *Strategic Management Journal*, no. 24(10), 997-1010.

24. Jovanovska-Boshkovska, N., Poposki, K. (2018). Territorial Marketing Strategy – Way ahead for Economic Development. *Horizons*, 23.2, 229-237.
25. Kachouie, R., Mavondo, F., Sands, S. (2018). Dynamic marketing capabilities view on creating market change. *European Journal of Marketing*, 52(2), 1007-1036.
26. Kavartzis, M. (2007). *City marketing: The past, the present and some unresolved issues. Journal Compilation*. Blackwell Publishing Ltd., 695-712.
27. Kolb, B. (2006). *Tourism marketing for cities and towns*. Oxford: Elsevier.
28. Kumar, N., Panda, R. (2019). Place branding and place marketing: a contemporary analysis of the literature and usage of terminology. *International Review on Public and Nonprofit Marketing*, 16, 255-292.
29. Maklan, S., Knox, S. (2009), Dynamic capabilities: The missing link in CRM investments. *European Journal of Marketing*, vol. 43, 11/12, 1392-1410.
30. Morgan, N.A. (2012). Marketing and business performance. *Journal of the Academy of Marketing Science*, no. 40(1), 102-119.
31. Müller-Seitz, G., Seiter, M., Wenz, P. (2016). *Was ist eine Smart City?* Wiesbaden: Springer.
32. Nguyen, H.T.T., Pham, H.S.T., Freeman, S. (2022). Dynamic capabilities in tourism businesses: antecedents and outcomes. *Review of Managerial Science*, <https://doi.org/10.1007/s11846-022-00567-z>.
33. Piening, E.P. (2013). Dynamic Capabilities in Public Organizations - A literature review and research agenda. *Public Management Review*, 15.2, 209-45.
34. Pike, S., Page, S.J. (2014). Destination marketing organizations and destination marketing: A narrative analysis of the literature. *Tourism Management*, 41, 202-227.
35. Priem, R.L., Butler, J.E. (2001). Is the Resource-based View a useful perspective for strategic management research? *The Academy of Management Review*, January, no. 26(1), 22-40.
36. Puderbach, S., Braun, T., Müller-Seitz, G., Danner-Schröder, A. (2017). Managing Dynamic Capabilities of Cities? From a Firm-based towards an Issue-based View of Dynamic Capabilities. *JCSM*, Vol. 9, 57-80.
37. Raszkowski, A. (2014). Place Marketing in the process of territorial identity creation and strengthening. *Journal of European Economy*, vol. 13, No. 2, 193-203.
38. Renigier-Biłozor, M., Biłozor, A. (2015), Territorial Marketing as an Element Boosting the Development of a Commune. *Real Estate Management and Valuation*, Vol. 23, No. 2, 38-49.
39. Santos, J.F., Bernardino, S. (2016). *Innovation from below: dynamic capabilities of the territory as a source for new social ventures*. The XXVII ISPIM Innovation Conference – Blending Tomorrow’s Innovation Vintage, Porto, Portugal on 19-22 June 2016. www.ispim.org.

40. Shahabadi, M.R.Y., Sajadzadeh, H., Rafieian, M. (2019). Developing a Conceptual Model for Place Branding: A Review of Theoretical Literature. *The Scientific Journal of NAZAR research center (Nrc) for Art, Architecture & Urbanism*, 16(71). 19-34. doi: 10.22034/bagh.2019.86870.
41. Slotegraaf, R.J., Moorman, Ch., Inman, J.J. (2003), The role of firm resources in returns to market deployment. *Journal of Marketing Research*, no. 40(3), 295-309.
42. Song, M., Di Benedetto, C.A., Nason, R.W. (2007). Capabilities and financial performance: The moderating effect of strategic type. *Journal of the Academy of Marketing Science*, March, vol. 35, iss. 1, 18-34.
43. Teece, D.J., Pisano, G., Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, vol. 18, no. 7, 509-533.
44. Teece, D.J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, vol. 28, no. 13, 1319-1350.
45. Temperini, V., Gregori, G.L., Cardinali, S., Perna, A. (2012). The Possible Convergence Between Business Marketing and Territorial Marketing: The "Land of Value" (LOV) Case. *China-USA Business Review*, Vol. 11, No. 5, 654-665.
46. Vorhies, D.W., Morgan, N.A. (2005). Benchmarking Marketing Capabilities for sustainable competitive advantage. *Journal of Marketing*, February, no. 69(1), 80-94.
47. Zbucheá, A. (2014). Territorial Marketing based on Cultural Heritage. *Management & Marketing*, vol. XII, iss. 2, 135-151.
48. Zhang, J., Conchar, M., Li, L. (2017), The impact of customer knowledge and marketing dynamic capability on innovation performance: an empirical analysis. *Journal of Business & Industrial Marketing*, Vol. 32 Iss. 7, 901-912.
49. Zohourian, S., Rahimnia, F., Nabizadeh, T. (2022). Dynamic Marketing Capabilities and Organizational Performance: The mediating role of Operational Marketing capabilities. *Marketing Science and Technology Journal*, 1(1), 143-164.

SOCIAL MEDIA IN THE PUBLIC RELATIONS STRATEGY OF THE CITIES OF KUJAWSKO-POMORSKIE VOIVODESHIP

Katarzyna RADECKA

Politechnika Bydgoska; katarzyna.woznicka@pbs.edu.pl, ORCID: 0000-0001-8389-5652

Purpose: The purpose of the article is to analyze trends and evaluate the role of social media in the public relations strategy of major cities of the Kujawsko-Pomorskie Province. Selected aspects of the activities of Polish cities in social media (public relations, image activity, and the strategy of entities responsible for city communication on the Internet) were analyzed.

Design/methodology/approach: The research analyzed literature on the development of social media and its use by Polish cities. Compilations and reports covering users' online activity were analyzed. A survey was conducted by means of a Google questionnaire on groups associating residents of 3 cities in Kujawsko-Pomorskie voivodeship.

Findings: Social media is becoming a tool for thoughtful creation and strengthening of the city's brand, as well as proper two-way communication. Thanks to the activities undertaken as part of agglomeration marketing, residents present in the virtual space should become true fans identifying with their place of residence, and through this, ambassadors of the place.

Research limitations/implications: Future research may be related to the creation of mentoring programs in the area under study.

Practical implications: The results of the survey can be used as input for designing training programs in the study area.

Social implications: Social media marketing means promotion conducted through a variety of means. This forces city managers to be dynamically flexible and look for solutions that can optimize promotional and communication processes online. The challenge facing the management of such communications is not only to encourage people to look at these profiles more often, but also to increase interactivity.

Originality/value: This article is mainly addressed to city managers who want to implement and improve the image strategy of the metropolis.

Keywords: social media, public relations, strategy.

1. Introduction

With the rapid growth of social media, it is constantly gaining new users eager to join in discussions on topics concerning both personal and business matters. Individuals, businesses, as well as public institutions are becoming part of a global network that treats all entities equally. In terms of the relationship between buyer and receiver of content, this is an innovative approach that brings many cobenefits as well as unprecedented challenges.

Nowadays, it is not only businesses that face the enormous challenge of operating and competing in a turbulent and changing market environment. Communication with the environment is becoming an integral part of cities' promotion strategies. City promotion is responsible for competitiveness, integration and the stimulating function of these activities (Sekuła, 2008). It is competitiveness that helps to compete for aid funds, investors, tourists, etc. Presence in the social sphere of the Internet can be an element that distinguishes a city from others, provided that a holistic brand strategy is created, of which social networks will be an element. However, they should not be treated as a unique extension of other communication channels, but as integral elements of a broader communication strategy. Cities and regions in the Kuyavian-Pomeranian Voivodeship, fighting for influence among themselves, aim to create a strong image, emphasizing various qualities and signaling the leading benefits of a given city's offer.

The article is an introduction to the subject of the use of social media in the public relations strategy of the main cities of Kujawsko-Pomorskie Voivodeship. Selected aspects of Polish cities' activities in social media (public relations, image activity, and the strategy of entities responsible for the city's communication on the Internet) were analyzed. The article concludes with an analysis of current trends in social media and their potential impact on cities' territorial marketing activities.

2. Social media as a modern communication and image-building tool for cities

The term social media is used extremely frequently, both in personal and professional life. They are used to establish as well as maintain relationships, share important as well as less important moments, but also provide communication. In the literature, social media (SM) is defined as a category of social technologies that use the Internet and also mobile media to share ideas and news (Kłososky, 2012). They are collections of applications and websites that provide interaction between users (Brown, 2012).

P. Levinson's social media include: YouTube, Wikipedia, blogs, social networks (Facebook, Instagram, etc.), Twitter and podcasts (Levinson, 2010).

The development of the Internet has modified the face of communication. However, it is social media that has revolutionized communication. Social media based on the Web 2.0 platform has features that no other media has had before (Adamski, 2012).

Andrzej Adamski suggests that Web 2.0 is a kind of phenomenon, a trend, a process that has become aimed at spreading the assumption of shared responsibility for published content and sharing both creativity and knowledge (Adamski, 2012).

In business, online social media is often referred to as consumer-generated media (consumergenerated media). They are all that binds all definitions of this phenomenon, a combination of technology and interactivity that results in the creation of new content.

Social networks offer skyrocketing prospects for spreading information. The moment you post a photo or any content on Facebook, you don't have to inform all your friends about it via email or instant messaging. This information is passed on automatically through the appropriate news feeds on the portal. It is important to remember when inserting any posts that all content posted on the profile, spreads in an instant (Tapscott, 2010). Social media also provides a wider opportunity to identify the needs and opinions of residents and other stakeholder groups.

Among other things, social media differ from traditional media in terms of price - they are not expensive, they allow, regardless of status, access to information - both to receive it and to broadcast and publish it, unlike traditional media, which generally require a specific background from those who want to publish information. The feature that unites traditional and new media is the ability to attract a significant audience - both a fanpage and a TV show can attract an audience of several or several million (Dorenda-Zaborowicz, 2012).

In addition to access to information sources, people gain the ability to form groups regardless of where they are, which allows them to discuss any topic with people from around the world. The overriding one is that all discussions are both open and public, and are usually watched by more than one person. Thus, each user is to some extent a moderator of a given discussion and can, and even should, verify the truthfulness of the presented arguments. If there is interest, you can start a discussion on any topic. In this sense, both the individual and the company or brand have similar tools to start and moderate discussions. Any user wishing to participate in a conversation on a given topic must perform a similar set of actions to which each party is already somewhat accustomed. In this way, the barrier associated with the need to leave the recipient's comfort zone is blurred, which is typical for communication with broadcasters associated with traditional media (Smirnov, 2018).

The ever-growing interest in social media is opening up new opportunities for cities in the process of personal branding. The level of emotion that is generated in the minds and hearts of its customers is the brand image. By definition, a brand is a combination of two components: tangible (services, products and the way they are communicated) and non-material (associations, feelings and emotions) (Ragnowicz, 2018).

The city provides users with a whole range of services and products to meet their needs. The situation illustrated in this way, allows us to assume that the aforementioned services and products should become the subject of promotional activities of cities. Promotion in this form should be carried out not only in virtual reality, but also in the real one. It is important to build a positive image of the city and induce people to use a given service or product.

When discussing the promotional activities of cities, it is important to remember that they are directed in two directions: outward and inward (Czornik, 2005). Internal promotion is directed to city residents, while external promotion is directed to people located outside the territorial unit. The task is one - to shape a positive image of the city. At the same time, it should be remembered that image building is a demanding and, above all, long-term process (Sekula, 2008).

The product can be considered from a political perspective, where it becomes an idea and the proposed offer an opportunity to participate in its creation. In such an arrangement, it provides an opportunity for the user to engage in urban policy-making through participation, and this can add value. This opportunity builds a positive relationship between the city and its residents. Through social media, users are encouraged to take advantage of the city's offerings, thereby building awareness of a particular offering. Cities should take care to make the most of the potential of such platforms. It is important to develop a coherent concept that adequately creates the image of the city in the eyes of its residents. At the same time, it allows you to track the various stages that are being implemented. The starting point should always be the analysis of the situation, the designation of areas of responsibility, the implementation of the project and the evaluation of the results obtained. Ch. Treadaway and M. Smith proposed the stages of a properly planned social media campaign:

- defining the audience,
- defining tasks and overarching goals,
- setting configuration options,
- creating an engaging and interactive page (Treadaway, Smith, 2010).

In considering a properly developed social media campaign, it is important to discuss the phenomenon of "storytelling." This term was formulated by Henry Jenkins in 2003. It encompasses a new way of telling stories, using different types of media, methods and points of view. It is a form that focuses on the message contained in multiple channels of communication. Different but complementary factors are present, ultimately outlining an elaborate message composed of several interacting elements. The content itself often changes, mainly through the inspiration of the audience's story. Indeed, storytelling is a living organism of communication, which relies primarily on communicating content that evokes interaction. Influencing the development of a story brings users together, who identify with the characters in the story. This is crucial, as it allows the customer to turn into a propagator and even a follower of the brand (Storytelling..., 2015).

Social media activities are becoming one of the tools used by a city or region to achieve strategic goals such as attracting investors or encouraging tourists to stay in the region.

3. Social media - analysis and research results

A new opportunity for promotional activities and showcasing achievements for local governments is social media, especially social networking. This is significant in the context of relatively low costs, as most cities currently have had to cut promotional budgets. The spending plan for the promotion of local government units of the city of Bydgoszcz in 2022 assumed the amount of PLN 8 349 747. Of which a large part of the funds was allocated to promotional activities of the city through sports at national and international events (Bydgoszcz City Budget).

According to DataReportal.com research analyzing January 2022, there were 32.86 million Internet users in Poland. Of all active users, as many as 27.20 million browsed social media. The most popular social media site in our country in the year under review was Facebook, with some 17.65 million visitors, which accounted for 88.1% of active web users. The second most popular was Messenger, with 79.8%. The third in terms of user interest was Instagram, with 59.6%. The remaining portals had a smaller number of users. Detailed data on the percentage distribution of users of the most popular social media in Poland is shown in Figure 1 (<https://datareportal.com/about...>).



Figure 1. The most used social media platforms in Poland - January 2022.

Source developed based on (Raport datareportal <https://datareportal.com/about>).

Bydgoszcz, Torun, Wloclawek are the three largest regional urban centers, both in terms of population and area. Facebook is the most popular social media platform used by these cities to connect with residents. This choice seems fully justified. It makes sense to be where it is easiest to reach residents. And the latter are eager to visit the cities' profiles, treating them as a reliable source of local information and return the favor with their "likes". Not every office

manages to capture attention as effectively. Empemedia, a company that specializes in training for local government institutions, analyzes the progress of Polish cities online. According to the list for 2021, Bydgoszcz and Toruń are in the top 10 in terms of the number of observers. In terms of creating "storytelling", both cities are in the October 2022 list of Polish cities published by Storender (Figure 2).

Fans - Commitment

Facebook Trends Poland October 2022

Trend	Profile	Storytellers (mediana)	Increase
-	1 Łódź	48 116	8%
-	2 Wrocław [Wrocław]	29 552	11%
-	3 epoznan.pl	25 248	5%
.....			
-2 ↓	11 bydgoszcz.pl	7 885	9%
.....			
-2 ↓	16 Mój Toruń	5 392	4%
-6 ↓	17 Kraków i Małopolska	5 280	-18%

Figure 2. Summary of the involvement of users of Polish cities.

Source: Own elaboration based on <http://s3trends.s3.amazonaws.com/poland/facebook/202210/202210>.

According to the report, the most user-engaging post was published on the Bydgoszcz portal. Users commented and shared the published information. The post concerned a missing person who was found thanks to publicizing the case in social media (Figure 3).



Figure 3. The most engaging post published by the city of Bydgoszcz on Facebook.

Source: Own elaboration based on <http://s3trends.s3.amazonaws.com/poland/facebook/202210/202210>.

The above-mentioned cities are also present on Instagram. By far the most "followers" have Bydgoszcz, because as many as 29,000 observers. Toruń comes second with 15,800 observers and Włocławek comes third with 5,929 observers. Instagram mainly gathers a community on its portal, which shares various photos, videos and descriptions with other users. The application happens to be mainly a valuable source of inspiration, as it gives us access to a huge number of thematic profiles.

In fact, all social profiles of cities include: linking articles from the official portal of the city, information about events, planned in the city, links to other portals, photos and videos. Some also publish weather forecasts or recipes. Social networks give the opportunity to differentiate the content depending on the audience group, for example, in Bydgoszcz different messages are posted on Facebook and others on Instagram. In addition, what must and does differentiate the cities' website from profiles on social networks is the way in which the published information is communicated. Portal coordinators avoid duplicating official and dry information from websites. It is possible to vary the content depending on the time of day, for example, on the Facebook of some cities "wake-up" and "bedtime" music suggestions are published.

Presented below are partial results of our own research, conducted in the form of an electronic survey created through a Google questionnaire and posted on three Facebook groups bringing together residents of the cities of Bydgoszcz, Toruń and Włocławek. The survey was aimed at residents of the aforementioned centers. The survey questionnaire was conducted in August 2022 on a group of 120 residents of Bydgoszcz, 132 residents of Toruń and 105 residents of Włocławek. The purpose of the measures taken was, first, to find out whether city residents, as social media users, reach out to the official profiles of the cities in which they reside. Secondly, to find out citizens' opinions on the relationship between social media use and the image of the city.

When asked about the most frequently used social media, Bydgoszcz residents pointed first to Facebook - 66% of respondents, Toruń residents answered similarly - 63%, while Włocławek residents pointed to Instagram 65%. In second place in both Bydgoszcz and Toruń, Instagram was the most popular - 25% in both cases, and for residents of Włocławek, Facebook was the most popular - 27%. In third place in all analyzed cities was Twitter (Bydgoszcz 5%, Toruń 8%, Włocławek 6%).

Table 1.

Which social media do you use most often?

Bydgoszcz	Toruń	Włocławek
Facebook	Facebook	Instagram
Instagram	Instagram	Facebook
Twitter	Twitter	Twitter
Inne	Inne	Inne

Source: own study.

Next, respondents identified the online sources from which they get information about the cities. In Wloclawek, the official website of the agglomeration remains the primary source of news, more than half (58%) of respondents. In second place, they use information on Facebook, but in relation to the website, this is a much smaller group (30% look there often and 18% rarely). The third source is online forums. When it comes to larger centers like Bydgoszcz and Toruń, the situation is radically different. In both cases, the dominant source of information about the cities is the Facebook accounts of both agglomerations (75% Bydgoszcz - 60% use often and 15% rarely; 77% Torun - 55% use often and 22% rarely). In second place, residents seek information by visiting their cities' websites.

However, 20% of respondents from Wloclawek do not know at all that the city has a Facebook profile, 45% did not know about the profile on Instagram.

Types of activity of respondents on Facebook of the cities of Bydgoszcz, Torun, Wloclawek. Basically all those who declared using the Facebook of their agglomeration read or browse the content there, a negligible group post comments, write posts. Few encourage friends to like their Facebook profile or share information on their private profile.

Below is the percentage distribution of responses (Figure 4):

- Reads or views content - Bydgoszcz - 92%; Toruń - 89%; Wloclawek - 72%.
- Leaves comments on profile - Bydgoszcz - 25%; Torun - 26%; Wloclawek - 7%.
- Likes posts - Bydgoszcz - 29%; Torun - 27%; Wloclawek - 25%.
- Encourages friends to like this profile Bydgoszcz - 6%; Toruń - 4%; Wloclawek - 1%.
- Shares posts on their profile - Bydgoszcz - 2%; Toruń - 1%; Wloclawek - 1%.

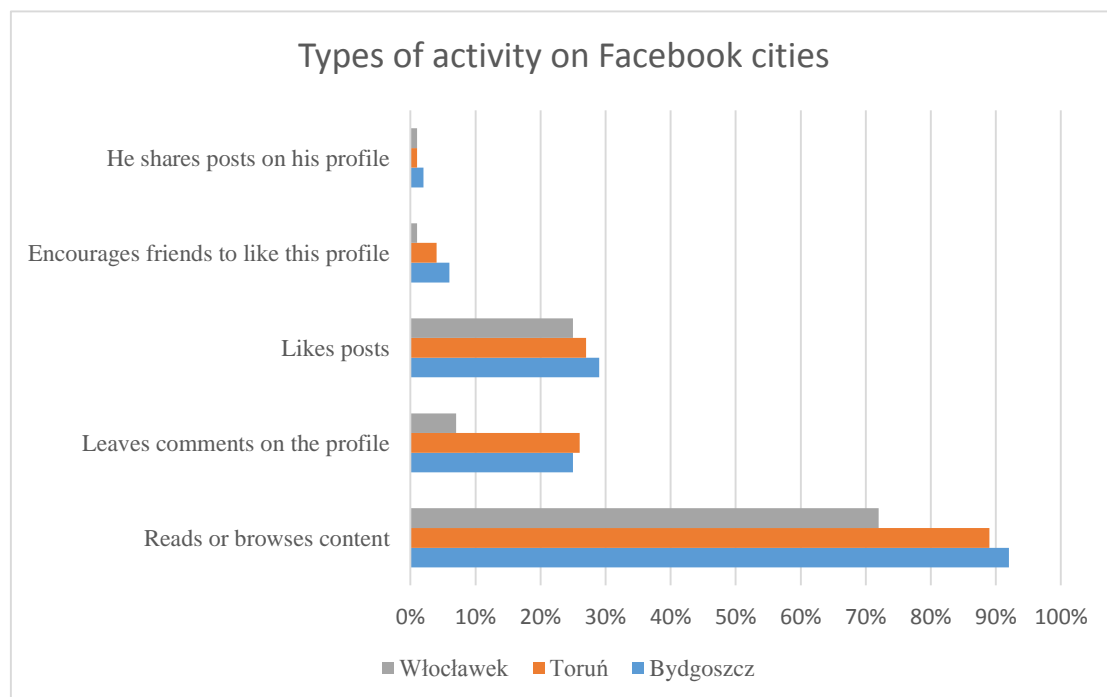


Figure 4. Types of activity on city social profiles.

Source: own study.

More than half of the respondents from Bydgoszcz believe that the city's use of social media can help improve relations with residents, while 25% see no impact on mutual relations, and only 8% pointed to the possibility of worsening them. In Toruń, the results were similar. In Włocławek, on the other hand, as many as 30% have no opinion on the subject.

Despite the fact that respondents quite rarely reach out interactively to the cities' social media, they overwhelmingly believe that the agglomeration, wishing to have a modern image, should use them in communicating with its audience.

4. Summary

The purpose of this article was to analyze and evaluate the use of social media in the strategy of major cities in the Kuyavian-Pomeranian region. Selected aspects of Bydgoszcz, Toruń and Włocławek's social media activities were analyzed.

The analysis of available reports shows that the aforementioned cities maintain engaging social media profiles that encourage users to communicate. This fact fits perfectly with the information policy of the cities, the premise of which is efficient communication with the public.

The survey shows that the leading source of information mainly about the larger cities of the province are the so-called Facebook Fanpages of these centers (Bydgoszcz, Toruń).

Despite the fact that social media is a media based on interaction, city residents, as the main recipients of messages on agglomeration profiles, use it in the way that is characteristic of the old media, that is, they are mostly passive recipients. Although participation and interaction is the case of urban social media at a fairly low level, the trend seems to be upward.

Social media is becoming a tool for consistent city branding and strengthening, as well as good two-way communication. With consistent actions taken to promote the city, Internet users become engaged fans and ambassadors of the place. That is why it is so important to be dynamically flexible in finding solutions that can optimize promotional and communication processes on the web.

Those responsible for the functioning of cities in social networks should be aware that the modern Internet is characterized by a huge variability of the information presented, so they should creatively modify the forms of communication using the tools available on the web.

References

1. Adamski, A. (2012). *Media w analogowym i cyfrowym świecie*. Warszawa: Dom Wydawniczy Elipsa.
2. Brown, E. (2012). *Working the Crowd: Social Media Marketing for Business*. Swidon: BCS, p. 17.
3. Budżet Miasta Bydgoszczy, <https://bip.um.bydgoszcz.pl/arttykul/916/674/budzet-miasta-bydgoszczy-na-2022-rok>, 20.10.2022.
4. Czornik, M. (2005). *Promocja miasta*. Katowice: Wyd. Akademii Ekonomicznej, p. 64.
5. Dorenda-Zaborowicz, M. (2012). *Marketing w social media. Nowe Media, 3. Studia i rozprawy*.
6. Klososky, S. (2012). *Enterprise social technology*. Austin, Texas: Greenleaf Book Group LLC., p. 211.
7. Levinson, P. (2010). *Nowe nowe media*. Kraków: Wyd. WAM.
8. Ragnowicz, K. (2018). *Marka miasta jako czynnik rozwoju miast w Polsce*. Polskie Towarzystwo Ekonomiczne, p. 76.
9. Raport Datareportal, <https://datareportal.com/about>, 20.10.2022.
10. Raport Sotrender, <http://s3trends.s3.amazonaws.com/poland/facebook/202210/202210>, 23.10.2022.
11. Sekuła, A. (2008). Marketing terytorialny. In: Z. Strzelecki (ed.), *Gospodarka regionalna i lokalna* (p. 288). Warszawa: PWN.
12. Smirnow, K. (2018). Marketing on Tumblr. Where it Help to be Honest (And Weird). *Digital Marketing and Consumer Engagement: Concepts, Methodologies, Tools, and Applications: Concepts, Methodologies, Tools, and Applications*. Management Association, Information Resources, IGI Global, p. 1184.
13. *Storytelling, czyli skuteczna forma przekazu* (2015). <http://agencjakrecisie.pl/storytelling/>, 23.10.2022.
14. Tapscott, D. (2010). *Cyfrowa Dorosłość. Jak pokolenie sieci zmienia nasz świat*. Warszawa: Wydawnictwo Akademickie i Profesjonalne, pp. 130-131.
15. Treadaway, Ch., Smith, M. (2010). *Godzina dziennie z Facebook marketingiem*. Gliwice: Helion, pp. 73-75.

THE IMPACT OF EU STRUCTURAL FUNDS RELATED TO INNOVATION IN SOCIO-ECONOMIC DEVELOPMENT AT A LOCAL LEVEL

Robert ROMANOWSKI^{1*}, Wojciech KISIAŁA², Bartosz STEPIŃSKI³

¹ Poznan University of Economics and Business, Institute of Marketing; robert.romanowski@ue.poznan.pl,
ORCID: 0000-0002-8585-6806

² Poznan University of Economics and Business, Institute of Informatics and Quantitative Economics;
wojciech.kisiala@ue.poznan.pl, ORCID: 0000-0003-3342-3985

³ Adam Mickiewicz University in Poznań, Faculty of Human Geography and Planning (Wydział Geografii
Społeczno-Ekonomicznej i Gospodarki Przestrzennej); bartosz.stepinski@amu.edu.pl,
ORCID: 0000-0002-2378-0033

* Correspondence author

Purpose: The aim of the paper is to verify the process of β -convergence at a local level in Poland within 2007-2016, taking the impact of spatial effects and obtained EU funds related to innovation on economic growth into account.

Design/methodology/approach: Spatial econometric methods were used in the research procedure. The modelling uses the economic aggregate, which is an alternative to the GDP measure of development. In addition, the traditional convergence equations were modified by adding variables defining spatial interactions to the specifications of the estimated models that may affect the rate of economic growth. The study covers data from all counties (NTS4) in Poland.

Findings: The estimated econometric models showed that between 2007-2016, there was a slow process of reducing economic inequalities between counties in Poland. The convergence process was conditioned by the amount of European funds obtained for innovation. The funds acquired in a given county stimulated the economic growth of this unit while, at the same time, having negative impact on the development dynamics of neighbouring units.

Originality/value: The added value of this elaboration is the inclusion of spatial effects affecting economic growth in the conducted analyses of conditional convergence. The presented study is one of a few in which the spatial impact was verified by including weights in the modelling of the matrix based on proximity, distance, flows and affiliation, carried out using data relating to all NTS4 units of a given European Union country.

Keywords: β -convergence, European funds, innovation, spatial effects, spatial regression models.

Category of the paper: research paper.

1. Introduction

The issue of inequality in the distribution of goods, income and capital has long been of interest to economists aiming to explain socio-economic development processes. The dynamics of this type of processes is manifested in the occurrence of business cycles, and spatial aspects are visible as differences in regional and local economic conditions. The challenge of contemporary development policy is to level the course of the business cycle and reduce excessive economic differences in the spatial dimension (Markowska-Przybyła, 2010). An important role attached to counteracting temporal and spatial development inequalities is related to the implementation of the European Union's regional policy. Its main objective is to guarantee economic and social cohesion within the Community by reducing territorial imbalances (Kisiała, Bajerski, Stępiński, 2017). The implementation of the cohesion policy is supposed to lead to convergence, which can be identified with the long-term reduction of differences in the level of socio-economic development across the EU territory (Rodríguez-Pose, Fratesi, 2004).

The problem of economic convergence, despite numerous attempts at empirical verification, has so far been generally regarded as controversial and unresolved (Kisiała, Suszyńska, 2017). Supporters of the convergence hypothesis, based on neoclassical growth models, argue that countries (regions) with a lower level of income *per capita* usually achieve higher rates of economic growth, which leads to the reduction of economic differences. In this approach, convergence results from the decreasing marginal productivity of production factors. However, post-Keynesian concepts, promoted, e.g. by Myrdal (1957), are equally popular. According to them, the economic growth is a spatially cumulative process, which means that rich countries or regions, thanks to the accumulated capital and access to resources, attract further economic activities and thus, limit the development opportunities of poorer areas. Although the latter may use so-called spread effects (i.e. development impulses induced by the expansion of prosperous areas), they are considerably reduced by so-called backwash effects (negative economic effects, such as the draining of labour, capital, goods and services to privileged areas). These processes lead to the deepening of economic inequalities, which is referred to as economic divergence (Puga, 1999).

Economic convergence studies are conducted mainly on an international and regional scale. Convergence analyses of local economies are much less frequent. Although there is a noticeable increase in interest regarding convergence research at the local level in foreign publications (Bukenya et al., 2002; Ying-Xia et al., 2005; Higgins et al., 2006; Bishop, Gripaios, 2006; Biedka et al., 2022), in the Polish literature, local studies (county or commune level of the country's territorial division) are very rare.

In the literature, an important role in stimulating the development of regions is often attributed to a strong innovation system (Gomułka, 1998). In the globalised world, knowledge becomes a key production factor, and the most important competence is creativity (Mączyńska, 2008). Poland's integration with the European Union has created conditions for increasing the level of innovation within the Polish economy and reducing the technological gap between the country and European leaders. This results from the possibility of spending the resources of the Community regional policy. Due to the fact that in the EU funds distribution system a key role is attached to the creation of innovative solutions, a significant scale of financial contribution enables the implementation of pro-innovation policy, which results in stimulating the processes of social and economic development of cities, regions and the country (Markowska, Strahl, 2012).

The goals of this article are determined by two research questions:

1. Was there a convergence process in Poland at the local level (between counties) and was it affected by the amount of funds obtained for innovation?
2. Were there spatial interactions in the convergence process and what was their mechanism of impact on the rate of economic growth?

Answers to the research questions were sought by verifying the β -convergence process at the local level (in counties) between 2007-2016. In econometric modelling, an alternative to the GDP measure of development, called the economic aggregate (EA), was used. In addition, the traditional convergence equations were modified by adding variables defining spatial interactions that may affect the rate of economic growth to the specifications of the estimated models.

2. Literature review

Research regarding the impact of the cohesion policy implementation on the economic growth of countries, regions or units at a lower tier of territorial organisation in the European Union (including, in particular, the occurrence of economic convergence) has a relatively long tradition. However, the findings made by the scientific community in such analyses are far from reaching some form of consensus (cf. e.g. Mohl, Hagen, 2010; Pellegrini et al., 2013). This, on the one hand, is due to the different temporal or spatial scopes of the analyses carried out and, on the other, to the different specifications of the econometric models used.

The study by Rodríguez-Pose and Fratesi (2004) should be considered as one of the first works that opened up the debate on the effectiveness of the European Union's regional policy to a wider extent. Using cross-sectional data for the 1989-1999 period, the authors found the occurrence of slow β -convergence between the regions included in the study (both in the model for all EU regions as well as in the specification limited to the least favoured regions only).

At the same time, very weak but positive and statistically significant impact of expenditure from European funds on economic growth was confirmed.

Since the time of publishing this publication, there have been a number of studies based on similar assumptions, the conclusions of which do not seem to confirm the findings achieved by Rodríguez-Pose and Fratesi (2004), or they confirm them only to a limited extent. These may include the study by Braidenbach et al. (2019), who analysed the impact of structural funds on changes in gross domestic product *per capita* in EU-15 regions between 1997 and 2008 (based on the models used, both including and excluding spatial effects). In this study, it was shown that the funds have a negative impact on economic growth in the analysed regions (between 0% and -0.5%). In addition, this impact is exacerbated by the presence of negative spatial effects.

Less pessimistic conclusions regarding the effectiveness of European Union regional policy were drawn by Antunes et al. (2020). The analysis allowed to confirm that there was β -convergence between regions in the period under study, but that European funds did not affect its occurrence (as a statistically insignificant variable). The authors pointed towards the need to coordinate the spending of structural funds with other policies and non-public investments in order to fully achieve the synergy effect.

Slightly different conclusions were reached in the study by Maynou et al. (2016). In this case, the analyses suggested that a β -convergence took place in the sample, while the positive direct impact of European funds' expenditure on economic growth was proven, while the existence of spatial effects in this respect (indirect impact of European funds) was not confirmed.

It is worth emphasising that apart from the analyses indicating the lack of evidence for the effectiveness of the cohesion policy implementation, there is a fairly numerous group of studies in which the positive impact has been confirmed of European funds on economic growth along with the incidence of indirect (spatial) effects as well as the occurrence of interregional convergence. Such conclusions can be found, among others, in the study by Fiaschi et al. (2018), who analysed the impact of structural funds on regional productivity, and in the work by Mohl and Hagen (2010) – but only in relation to regions characterised by the least favourable economic parameters. A positive assessment concerning the impact of European funds on economic growth in the EU-15 regions can also be found in the study by Rodríguez-Pose and Novak (2013), but with the caveat that it relates to the later of the two analysed programming periods (2000-2006).

A distinctive feature of all the above-mentioned studies has been the failure to include the regions of the member states in the analyses which accessed the European Union in 2004 or later. The main reasons for this are, on the one hand, the shorter period of implementing cohesion policy in the 'new EU' countries and, on the other, the different economic and institutional conditions in these countries in relation to the member states before the 'great enlargement'.

Exceptional work in this regard includes the study by Scottie et al. (2022), in which the authors analysed the impact of European funds on the level of economic growth in 256 regions of the EU-27 (excluding Croatia) during the 2007-2013 programming period. The results of the analysis indicate the occurrence of a fairly rapidly progressing β -convergence across regions (especially in comparison with the results of studies from earlier programming periods), with statistically significant and positive impact of expenditures on research and development, human capital and transport. The occurrence of positive indirect (spatial) effects of the implemented projects was also confirmed.

A separate and relatively sparsely represented group of analyses in the literature are those related to the impact of European funds on economic growth and competitiveness in individual member states at the local level. Among these, mention should be made of the work by Alecke et al. (2013), who analysed the impact of investment subsidies in one of the programmes co-financed by the 1994-2006 European Regional Development Fund directed towards enterprises for the purpose of increasing labour productivity per employee among a set of 225 local labour markets in Germany. This analysis showed a positive effect of the funds spent on labour productivity (a 1% increase in spending had an average effect of increasing labour productivity per employee by 0.3%). In addition, the occurrence of spatial effects was also identified (the influence of spatial units directly adjacent to each other). Similar conclusions were also formulated by Biedka et al. (2022), who carried out an analysis of the impact regarding structural funds earmarked for the development of human resources (expenditure under the Human Capital Operational Programme) on the level of development on a local scale in Poland's municipalities (measured by the country's *per capita* income).

3. Data and methods

The selection of variables characterising the economic growth of the analysed territorial units is of key importance for convergence studies. The measure commonly used in this regard is *GDP per capita*, which is most often applied at the national level, less frequently at the regional level. However, due to the lack of data on GDP at the level of counties in public statistics, an alternative measure called the economic aggregate (EA) was used (Korec, Polonyová, 2011; Romanowski, 2020). The economic aggregate is obtained by multiplying the number of employees (jobs) in the region (county) and the average monthly salary in the region (county). It is relative to the number of inhabitants (social variant) or the area of the unit (geographical variant).

The economic aggregate refers to the Clark division theory, in which there is an assumption of an increase in remuneration of production factors in accordance with their marginal productivity. This means that when analysing changes in the level of remuneration (e.g. average

remuneration in a county), one can estimate changes in the level of development. An alternative solution would be to measure productivity, which could technically relate to GDP (GVA) generated at the local level. In addition to the high costs of obtaining such data, in Poland, there is also a violation regarding the main assumptions of the Clark division theory (Hein, 2014). Since the 1980s, in many developed economies, due to the pressure on short-term profits, productivity curves have been rising and wage curves have stagnated or increased at a disproportionately lower level (Hein, 2014). Without going into political disputes, it is worth assuming that the size of wages on a local scale is a better measure of local development than the level of productivity (Kwiatkowski, Kucharski, 2011).

The economic aggregate (EA) has an explanatory power similar to the GDP indicator for a region (Hampl, 2005; Korec, 2009). Hampl (2005) presented justification for using EA in research at the level of regional and local economic development. This author emphasized the social and economic homogeneity taken into account by EA in the regions of Central Europe undergoing economic transformation. Importantly, EA *per capita* combines social and economic (salaries) elements by taking the stream of money passing through a given community into account. The disadvantage of the indicator is the construction of the average gross remuneration for a county. The measure is based on salaries of employees hired at entities of the national economy, excluding business entities employing up to nine people.

In addition to the quantification of economic growth at the local level, the implementation of research required determining the amount of EU support for projects related to innovation of each county in Poland. From the point of view of considerations in the work, the most important were the expenditures implemented under the intervention category numbered 01-09, belonging to the priority topic 'Research and technological development, innovation and entrepreneurship' (RTD variable). They are part of the policy supporting innovation (Romanowski, 2015). Relationships between science and industry are supported by expenditures within categories 01, 02, 04, 07, between enterprises - 05, 08, 09, between large enterprises and the local government - 06 (eco-innovations), and supporting all links - 03 (Table 1). The value of these funds was determined on the basis of the National IT System – IT System for Monitoring and Financial Control of the Structural Funds and the Cohesion Fund (SIMIK) database. The SIMIK database contained information on all projects implemented using EU funds within the 2007-2013 financial perspective.

All contracts that were implemented throughout the country were removed from the list because of the inability to conduct volatility analysis at the county level. In addition, contracts were removed for which their implementation was not territorially defined. Contracts that were implemented in a given voivodeship were left for analysis, as the amounts spent on a given project were evenly divided among all counties of a specified voivodeship.

Table 1.

Categories of interventions within the priority theme 'Research and technological development, innovation and entrepreneurship (RTD)'

Number of intervention category	Name of intervention category
01	R&TD activities at research centres
02	R&TD infrastructure (including physical plant, instrumentation and high-speed networks linking research centres) and specialised centres of technological competence
03	Technology transfer and improvement of cooperative networks between SMEs, as well as between SMEs and other businesses and universities, various institutions of post-secondary education, regional authorities, research centres and scientific and technological poles (scientific and technological parks, technopolises, etc.)
04	Support for R&TD, particularly in SMEs (including access to services related to R&TD services at research centres)
05	Services in the field of advanced support for companies and groups of companies
06	Support for SMEs in the promotion of products and environmentally-friendly processes (introduction of effective environmental management systems, adoption and use of pollution prevention technologies, integration of clean technologies into company production)
07	Investments in companies directly linked to research and innovation (innovative technologies, establishment of new enterprises by universities, existing R&TD centres and enterprises, etc.).
08	Other investments in enterprises
09	Other measures to stimulate research and innovation as well as entrepreneurship in SMEs

Source: adapted from Commission Regulation (EC) No. 1828/2006 of 8 December 2006, Annex II, pp. 31-34 and data available on the Portal of European Funds (PFE, 2014).

The value of expenditure under the priority *RTD* theme was calculated by summing up the values of the assigned intervention categories implemented in a given county. The values calculated in this way were relativised via dividing them by the number of inhabitants in individual counties.

In the research procedure, econometric methods were used. The research methodology was based on the classic β -convergence modelling approach popularised by Barro and Sala-i-Martin (1992; 2004). The formal analysis was reduced to the estimation of regression models, verifying whether there was a statistical relationship between the initial level of economic growth and its dynamics in the analysed period. In addition, it was examined whether the *per capita* growth at the local level was affected by EU funds allocated to innovation. For this purpose, the models were extended by adding a control variable, i.e. the value of EU funds for innovation obtained in individual counties in Poland for the 2007-2013 financial perspective (*RTD* variable). Finally, in order to check the impact of funds obtained in a given location (a given county) on other locations, a spatial component was added to the models in the form of a spatially lagged control variable (the value of EU funds obtained for innovation in neighbouring counties).

In the literature, such a group is referred to as spatial cross-regression models (SCM). They make it possible to detect interactions in a set of explanatory variables. Due to the lack of variable correlation with random components, SCM models can be estimated using the method of ordinary least squares (Sucheckı, 2010; Gorna, 2019).

Four types of spatial weight matrices were applied in the study. Each of them reflected the structure of connections between the analysed counties in a different way, and thus, enabled identification of the mechanism concerning the impact of neighbouring locations on a given object (county). They included:

1. Adjacency matrix W1 – in this case, the neighbourhood was defined using the criterion of a common border (spatial contiguity). It was assumed that the neighbours are counties that share a common border, regardless of its length (first-order contiguity matrix of queen type).
2. Distance matrix W2 – specification of the elements of this matrix was based on the measurement of the distance between counties i and j . Measurements were made in the Euclidean metric, and the weights were calculated using the linearly decreasing function $w_{ij} = d_{ij}^{-1}$ (inverse distance matrix).
3. Matrix of flows W3 – weights reflected the actual (real) connections between counties in terms of commuting to work. According to this matrix, neighbouring units are those between which employment-related population flows took place, and the individual weights w_{ij} were equal to the number of people commuting to work from the county i to j .
4. Block weights matrix W4 – the neighbourhood did not result from geographical proximity, but from belonging to the same group. Block weights connect every observation in a data set that belong to the same category. It was assumed that the neighbours of the i -th county will be other counties located in the same voivodeship.

Each of the spatial weights matrices reflected the structure of connections between counties in a different way, and therefore, their use in econometric modelling was the basis for verifying the spatial impact mechanism conditioning the process of economic convergence at the local level in Poland. Matrix W1 made it possible to show dependencies between counties, resulting from adjacency. The second matrix (W2) was based on the assumption that counties did not have to share a common border in order to interact with each other, and the strength of the impact in this case was influenced by the geographical proximity of counties. The next matrix (W3) favoured actual links (interactions) between counties over geographical proximity. These links were quantified by commuting, which could be influenced, on the one hand, by the distance, and on the other, by the certain attractiveness of individual counties as places generating jobs. Finally, the W4 matrix made it possible to identify regional conditions, recognising counties from the same voivodeship as neighbours.

The spatial weight matrices were row-standardised, which means that the sum of the weights of neighbours for each county was always the same (equal to 1). Therefore, it was possible to calculate spatial lag of a given variable in the form of a product of the weight matrix and this variable, interpreting it as a weighted average of this variable's values in neighbouring units (according to the applied spatial weight matrix).

The final form of the estimated models was as follows:

$$\ln\left(\frac{EA_{i,2016}}{EA_{i,2007}}\right) = \alpha_0 + \alpha_1 \ln(EA_{i,2007}) + \alpha_2 RTD_i + \alpha_3 \left(\sum_{j \neq i} w_{ij} RTD_j\right) + \varepsilon_i, \quad (1)$$

where:

$EA_{i,2007}$ means income *per capita* (quantified by the value of the economic aggregate)

in the i -th county ($i = 1, 2, \dots, 379$) during the initial period of analysis (2007),

$EA_{i,2016}$ is the value of this feature during the final period of analysis (2016),

RTD_i and RTD_j are the values of EU funds for innovation *per capita* obtained in the i -th and j -th county within the 2007-2013 financial perspective, respectively,

w_{ij} comprises an element of the spatial weights matrix W defining links between the i -th and j -th counties,

α_0 , α_1 , α_2 and α_3 constitute the estimated model parameters,

ε_i is the random component (model error term).

The basis for drawing conclusions about convergence or divergence was the statistical significance of the α_1 coefficient. A negative estimation of the parameter indicated the presence of convergence, while a positive value indicated divergence. The statistically significant estimation of the α_2 parameter was related to the recognition of EU funds allocated to innovation as a factor conditioning growth. Finally, the statistically significant estimation of the α_3 parameter (standing for spatial lag) could be interpreted as the occurrence of spatial effects (indirect impact of European funds).

4. Results

As previously mentioned, this paper is devoted to the analysis of β -convergence at a local level (between counties) in Poland. Regression modelling was carried out in four variants, each of them using a different spatial weights matrix. The obtained results are presented in Table 2.

Table 2.

Estimation results of convergence models

Model with the weight matrix:	α_0	p -value	α_1	p -value	α_2	p -value	α_3	p -value	R^2
W1	5.493	0.000	-0.126	0.000	0.057	0.000	-0.006	0.701	0.199
W2	5.514	0.000	-0.126	0.000	0.057	0.000	-0.009	0.547	0.200
W3	5.563	0.000	-0.126	0.000	0.056	0.000	-0.014	0.039	0.200
W4	6.083	0.000	-0.129	0.000	0.056	0.000	-0.079	0.028	0.209

Source: own calculations.

Econometric models showed that in the years 2007-2016, there was a slow process of reducing economic inequalities between counties in Poland. This means that in the analysed years, economic growth at the local level was in line with the convergence hypothesis. Negative and statistically significant estimations of the α_1 parameters relating to the variable $\ln(EA_{i,2007})$ proved that counties starting from a lower level of economic growth statistically, achieved a higher growth rate, thus, catching up with units in a better economic condition at the beginning of the study. A low value of the α_1 parameter, although negative and statistically significant, proved that the convergence process was very slow. The convergence process at the local level was conditioned by the amount of EU funds obtained for innovation-related purposes. Greater use of funds caused faster economic growth, as evidenced by positive (and statistically significant) estimates α_2 . Funds allocated to research and technology development contribute to increasing the level of innovation and productivity, which results in stimulating social and economic development processes at the local level. When analysing cause-and-effect relationships, it should be borne in mind that there is a feedback loop between innovation and economic growth. Rich regions with a high level and dynamic growth have greater opportunities to obtain and allocate funds for research and development. At the same time, expenditure on innovation accelerates the dynamics of economic growth.

An opposite direction of the relationship was indicated by the estimations of the α_3 parameter relating to spatial lags in the value of EU funds used for innovation. This means that the funds obtained by the neighbours (regardless of the definition of neighbourhood used) weaken the growth dynamics in a given county. This may suggest that the conditions for spreading growth impulses generated by investments in research and technological development on a larger scale have not yet emerged. The obtained results seem to indicate that in the analysed period, pro-innovation investments in the neighbouring counties primarily built their competitive advantage. However, it can be presumed that over time, as the country enters higher levels of socio-economic development, the process of growth impulse diffusion to other areas becomes apparent. The innovation diffusion mechanisms should, in the long term, lead to a reduction in inter-county disproportions.

When analysing the results of modelling with the use of various spatial weight matrices, it should be noted that in the first two cases (adjacency matrix and distance matrix), the variables quantifying the level of using EU funds for innovation in neighbouring counties (i.e. spatial lags of the *RTD* variable), turned out to be statistically insignificant (p values 0.701 and 0.547, respectively). In turn, the use of the flows and block weight matrices showed the statistical significance of spatial lags ($p = 0.039$ and $p = 0.028$). This means that the interaction between counties in the discussed scope was not related to geographical proximity resulting from immediate vicinity or short distance. Therefore, spatial cross-regression models based on the *W1* and *W2* matrices are not an appropriate approach for conditional convergence analysis. The interaction may, however, be analysed through the prism of actual connections between

counties, which can be symptomatically measured by commuting volume (matrix W3). Nevertheless, these links were not innovation and growth carriers, but were rather associated with negative economic effects, such as the draining of labour, capital, goods or services from poorer to richer counties. In this case, the mechanism of spatial interaction led to the polarisation of local economies. Similar relationships were identified during the analysis of the model using the block weight matrix (W4). This may be related to the situation in which counties from the same voivodeship (understood as neighbours according to the matrix used) competed for the same funds distributed at the regional level. This competition resulted in the diversification of expenditures on research and technological development which, in turn, led to deepening development differences.

Finally, it should be noted that the estimated models have limited explanatory value. The coefficients of determination R^2 oscillated around the level of 0.2, which means that the variables included in the models explained approximately 20% of the variability in economic growth dynamics. It is worth emphasizing, however, that during regression modelling of β -convergence, high coefficients of determination are rare.

5. Discussion and conclusions

In light of the conducted research, it may be concluded that in the years 2007-2016, inequalities in the level of economic development of counties in Poland decreased. The process of economic convergence at the local level resulted from the negative relationship between the initial level and the rate of economic growth of individual counties. Moreover, it was conditioned by the amount of European funds obtained for innovation. The funds obtained in a given county stimulated the economic growth of this unit but, at the same time, had negative impact on the dynamics regarding development of neighbouring units.

The obtained results are only partly consistent with those found in earlier papers in which the convergence process was analysed at the local level (Ying-xia et al., 2005; Bishop, Gripaios, 2006; Higgins et al., 2006; Alecke et al., 2013; Biedka et al., 2022). As in these publications, this study confirmed the existence of the β -convergence process while, at the same time, showing the role of European funds as a factor positively influencing economic growth. However, opposite conclusions were reached as far as the impact of the spatial factor is concerned. The cited papers attribute the factor a significant role in stimulating the growth process, while the obtained results rather tend to recognise this factor as a de-stimulant. This may be due to several reasons:

1. different specification of the estimated econometric models (panel models vs. spatial regression models),
2. diversified research area (China, USA, Great Britain, Germany, Poland),

3. different spatial scale of conducted research (level of local labour markets, county and communal level),
4. diverse thematic scope of intervention included in the models (measures supporting infrastructure, human capital and innovation),
5. a different time range of the conducted research (German studies on the financial perspectives – 1994-2006 and Polish studies – 2007-2013).

The added value of this paper is the inclusion of spatial effects determining economic growth in the analysis of conditional convergence. The presented study is one of the few in which the spatial impact was verified by including weights based on contiguity, distance, flows and belonging to a specific group in the modelling of the matrix. While the use of the first two types of matrices did not reveal the occurrence of spatial interactions, the use of flow and block weight matrices turned out to be an appropriate approach in the conditional convergence analysis. Hence, further research considering spatial effects in convergence processes should be focused on explaining the mechanisms of mutual interactions of the analysed spatial units.

To some extent, the conclusions are weakened by the limited degree of the models' fit to empirical data (determination coefficients of the estimated models oscillated around 0.2). It seems that the rate of economic growth is a much more complex phenomenon than it would appear from the estimated regression models, even supplemented with variables determining the impact of the neighbourhood.

Acknowledgements

The project financed within the Regional Initiative for Excellence programme of the Minister of Science and Higher Education of Poland, years 2019-2022, grant No. 004/RID/2018/19, financing 3,000,000 PLN.

References

1. Alecke, B., Mitze, T., Untiedt, G. (2013). Growth effects of regional policy in Germany: results from a spatially augmented multiplicative interaction model. *The Annals of Regional Science*, 50, pp. 535-554.
2. Antunes, M., Viegas, M., Varum, C., Pinho, C. (2020). The Impact of Structural Funds on Regional Growth: A Panel Data Spatial Analysis. *Intereconomics*, 55, pp. 312-319.

3. Biedka, W., Herbst, M., Rok, J., Wójcik, P. (2022). The local level impact of human capital investment within the EU cohesion policy in Poland. *Papers in Regional Science*, Vol. 101, pp. 303-325.
4. Bishop, P., Gripiaios, P. (2006). Earnings convergence in UK counties: a distribution dynamics approach. *Applied Economics Letters*, Vol. 13, No. 1, pp. 29-33.
5. Breidenbach, P., Mitze, T., Schmidt, C. (2019). EU Regional Policy and the Neighbour's Curse: Analyzing the Income Convergence Effects of ESIF Funding in the Presence of Spatial Spillovers. *Journal of Common Market Studies*, Vol. 57, No. 2, pp. 388-405.
6. Bukenya, J.O., Gebremedhin, T.G., Schaeffer, P.V. (2002). Income convergence: a case study of West Virginia counties. *Research Paper*, 2002-03. Alabama: A&M University.
7. Commission Regulation (EC) No. 1828/2006 of 8 December 2006 laying down detailed rules for the implementation of Council Regulation (EC) No. 1083/2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and of Regulation (EC) No. 1080/2006 of the European Parliament and the Council on the European Regional Development Fund; Annex III: List of data on operations to be communicated on request of the Commission for the purpose of documentary and on-site audit under Article 14, Official Journal of the EU L 45/3, http://www.ncbir.pl/gfx/ncbir/userfiles/_public/pl_1828_wykonawcze_corr_2_02_2007.pdf, 11.11.2015.
8. Fiaschi, D., Lavezzi, A., Parenti, A. (2018). Does EU cohesion policy work? Theory and evidence. *Journal of Regional Science*, 58, pp. 386-423.
9. Gomułka, S. (1998). *Teoria innowacji i wzrostu gospodarczego*. Warszawa: CASE.
10. Górna, K. (2019). *Analiza konwergencji gospodarczej regionów Unii Europejskiej z wykorzystaniem metod ekonometrii przestrzennej*. Toruń: Wydawnictwo Naukowe UMK.
11. Hampl, M. (2005). *Geografická organizace společnosti v České republice: transformát procesy a jejich obecný kontent*. Praha: Univerzita Karlova Praha.
12. Hein, E. (2014). Nasze pensje są sztucznie hamowane. Bez wzrostu płac grozi nam kolejny kryzys i rewolucja, wywiad dla portalu *Forsal.pl* z 30.10.2014, <http://forsal.pl/artykuly/832443,hein-nasze-pensje-sa-sztucznie-hamowane-bez-wzrostu-plac-grozi-nam-kolejny-kryzys-i-rewolucja.html>.
13. Higgins, M.J., Levy, D., Young, A.T. (2006). Growth and Convergence across the United States: Evidence from County-Level Data. *The Review of Economics and Statistics*, Vol. 88, No. 4, pp. 671-681.
14. Kisiała, W., Suszyńska, K. (2017). Economic growth and disparities: an empirical analysis for the Central and Eastern European countries. *Equilibrium: Quarterly Journal of Economics and Economic Policy*, 12(4), 613-631. DOI: 10.24136/eq.v12i4.32.
15. Kisiała, W., Bajerski, A., Stępiński, B. (2017). Equalising or Polarising: The Centre–Periphery Model and the Absorption of EU Funds under Regional Operational Programmes in Poland. *Acta Oeconomica*, 67(2), 413-434. DOI: 10.1556/032.2017.67.3.6.

16. Korec, P. (2009). General and individual reasons of development of regional structure of the Slovak Republic. In: A.I. Tatarkin (ed.), *Russia and Slovakia: modern tendencies of demographic and socioeconomic processes* (pp. 50-72). Ekaterinburg: Institute of Economics.
17. Korec, P., Polonyová, E. (2011). Zaostávajúce regióny slovenska – pokus o identifikáciu a poukázanie na príčiny. *Acta Geographica Universitatis Comenianae, Vol. 55, No. 2*, pp. 165-190.
18. Kwiatkowski, E., Kucharski, L. (2011). Konkurencyjność gospodarki a poziom wynagrodzeń (analiza na przykładzie polskich powiatów). *Zeszyty Naukowe, nr 9*. Kraków: Polskie Towarzystwo Ekonomiczne.
19. Mączyńska, E. (2008). Innowacje a rynek pracy. In: J. Kotowicz-Jawor (ed.), *Polska i Rosja na drodze do innowacyjnego rozwoju* (pp. 59-74). Warszawa: Wydawnictwa Key Text Sp. z o.o.
20. Markowska, M., Strahl, D. (2012). Evaluation of the European Union Regions Convergence Regarding Innovation. *Argumenta Oeconomica, 1(28)*, pp. 41-67.
21. Markowska-Przybyła, U. (2010). Konwergencja regionalna w Polsce w latach 1999-2007. *Gospodarka Narodowa, 11-12*, pp. 85-110.
22. Maynou, L., Saez, M., Kyriacou, A., Bacaria, J. (2016). The Impact of Structural and Cohesion Funds on Eurozone Convergence, 1990-2010. *Regional Studies, Vol. 50.7*, pp. 1127-1139.
23. Mohl, P., Hagen, T. (2010). Do EU structural funds promote regional growth? New evidence from various panel data approaches. *Regional Science and Urban Economics, 40*, pp. 353-365.
24. Myrdal, G. (1957). *Economic Theory and Under-developed Regions*. London: Gerald Duckworth & Co.
25. Pellegrini, G., Terribile, F., Tarola, O., Muccigrosso, T., Busillo, F. (2013). Measuring the effects of European Regional Policy on economic growth: A regression discontinuity approach. *Papers in Regional Science, Vol. 92, No. 1*, pp. 217-233.
26. Puga, D. (1999). The rise and fall of regional inequalities. *European Economic Review, Vol. 43, No. 2*, pp. 303-334.
27. Rodríguez-Pose, A., Fratesi, U. (2004). Between Development and Social Policies: The Impact of European Structural Funds in Objective 1 Regions. *Regional Studies, Vol. 38.1*, pp. 97-113.
28. Rodríguez-Pose, A., Novak, K., (2013). Learning processes and economic returns in European Cohesion Policy. *Investigaciones Regionales, 25*, pp. 7-26.
29. Romanowski, R. (2015). *Wpływ wsparcia systemów innowacji na rozwój lokalny*. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu.

30. Romanowski, R. (2020). The impact of the Triple Helix model on the local development of Western Poland. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, No. 146, pp. 393-411. DOI:10.29119/1641-3466.2020.146.28.
31. Scotti, F., Flori, A., Pammolli, F. (2022). The economic impact of structural and Cohesion Funds across sectors: Immediate, medium-to-long term effects and spillovers. *Economic Modelling*, 111.
32. Suchecki, B. (ed.) (2010). *Ekonometria przestrzenna. Metody i modele analizy danych przestrzennych*. Warszawa: C.H. Beck.
33. Ying-xia, P., Rong-hua, M., Ying, G., Xing-yuan, H. (2005). Spatial-temporal dynamics of regional convergence at county level in Jiangsu. *Chinese Geographical Science*, vol. 15, No. 2, pp. 113-119.
34. Žáček, J., Hruža, F., Volčík, S. (2019). The Impact of EU Funds on Regional Economic Growth of the Czech Republic. *Finance a úvěr – Czech Journal of Economics and Finance*, vol. 69, No. 1, pp. 76-94.

THE EUROPEAN CAPITAL OF CULTURE AS A MARKETING MEGA-EVENT: THE CHALLENGE OF GETTING NOMINATED

Wawrzyniec RUDOLF^{1*}, Elham CHERAGHI², Marta OLASIK³

¹ University of Lodz; wawrzyniec.rudolf@uni.lodz.pl, ORCID: 0000-0003-0729-7823

² University of Lodz; elham.cheraghi@edu.uni.lodz.pl, ORCID: 0000-0002-9243-8645

³ University of Lodz; marta.olasik@uni.lodz.pl, ORCID: 0000-0003-1299-1852

* Correspondence author

Purpose: Explore the recent evolution of the European Capital of Culture (ECoC) program in terms of both selection criteria and the profiles of the cities nominated to become a one-year cultural capital of Europe

Design/methodology/approach: The case study was used as the research method. In this research, the case of the ECoC program was presented as a chance for European cities aiming at creating their competitive position based on culture and creativity. The authors have identified three subsequent periods in the evolution of the ECoC and concentrated on identifying the differences between them, referring to selection criteria and the characteristics of the awarded cities.

Findings: The evolution of the ECoC formula shifts toward European cities with better recognition of intangible heritage, smaller size, and lower administrative status. Possessing the tangible heritage assets is not the leading advantage anymore, and the chances of success are bigger for locations which had not been recognized before as cultural centers.

Research limitations/implications: The study is based on desk research, and no qualitative research was conducted. Therefore, the interviews with the city marketers involved in the celebration of the ECoC should be included in further studies for deepening the issue.

Practical implications: The paper draws some implications for practice for city marketers aiming at improving the international recognition of the city under the cultural label. The call for the next nominations of the ECoC is open for Czech, French, Polish, and Swedish cities, and soon it will be a case for Cyprus, Belgium, Malta, Spain, Bulgaria, Denmark, the Netherlands, and Italy.

Originality/value: The paper identifies the current trends in designation of the ECoC; it covers the unique description of the nominated cities from the selected categories, which enables to assess the chances to be nominated in the incoming calls.

Keywords: City Image, Event Marketing, Place Marketing, European Capital of Culture (ECoC), UNESCO, Event Bidding.

Category of the paper: case study, literature review.

Introduction

Cities around the world are aware of the role of place image in generating development processes. They take action to use the tangible and intangible components of their identity to formulate a simplified but clear image message, one that would be attractive to broad communities. Nowadays, business topics are replaced by soft topics, such as nature, sport, education, and culture. There is widely accepted evidence on the powerful advantages while using art(s) and culture-based activities to promote a place (Kalandides et al., 2012). Culture became the chance for localities to improve their image, as well as city development itself.

Mega-events in the field of culture are playing an increasingly important role in the development of localities (cities and regions). These events serve to attract people from outside and within the city to spend money on cultural and leisure activities, accommodation, or gastronomy within the hosting location. Such cultural events include music entertainment, dance and theater, food, shopping, visual arts, and other cultural activities that improve the city's image and reputation in the minds of current residents, tourists, investors, and other stakeholders (Getz, 2008). A cultural mega-event, such as the European Capital of Culture, is composed of a set of cultural events of different scales that take place over the course of a year in the hosting city. Both the quantity and diversity of these events are large enough to appeal to a variety of cultural users with a variety of different cultural interests and tastes.

Our study focuses on the role of culture in building the image of the city based on the example of the flagship program of the European Union within its cultural policy, namely the European Capital of Culture (ECoC). Worth noting in this context is the fact that 'the EU is pursuing two separate and governed by different rules policies – policy in the sphere of culture and excluded from it audio-visual policy' (Sanetra-Szeliga, 2013, p. 361), as well as the fact that as of 1983, '[t]he leaders of the Member States called for intensifying cooperation in the field of culture, particularly in terms of the promotion of common cultural heritage, which is the emanation of European values' (Sanetra-Szeliga, 2013, p. 363).

The purpose of the paper is to explore the recent evolution of the ECoC program, analyze the characteristics of the awarded cities, and explore the relationship between the ECoC and the UNESCO. The following research questions were formulated:

- How do events/mega-events contribute to city image communication?
- What is the European Capital of Culture as a mega-event and how does it promote culture within the UE, across European cities?
- What are the differences in the criteria for selecting cities nominated for the ECoC title – in the past, presently, and in the future?
- What are the typical profiles of the ECoC host cities (in subsequent periods)?
- What is the relationship between the ECoC and the UNESCO Heritage Sites as well as the UNESCO Creative Network within the subsequent periods?

The role of events in communicating the city image

The notion of 'city image' was coined in 1960 by American town-planner Kevin Andrew Lynch (1960). As Marius-Cristian Neacșu indicates (2009), this term can be – and is in literature – understood threefold, namely as the sphere of mental image, as just the city image, and as an urban marketing technique or branding (p. 174). As a standalone concept, the city image represents 'the visual impact, as a whole, of a place or the general impression people have about a place or simply, the qualitative characteristics (positive or negative) that the name of a place evokes' (Neacșu, 2009, pp. 174-175; Cowan, 2005, p. 192).

With this basic concept in mind, it is now vital to present Philip Kotler's contribution to marketing theories before starting to analyse image-building in the context of the ECoC. The author differentiates mainly between slogans, visual symbols, and events as tools for an effective communicating of a place image (Kotler et al., 2002, p. 241). In this theory, a slogan constitutes a 'short, encompassing phrase that embodies and overall vision of a place' and that 'when integrated into a strategic marketing plan, can be useful in generating enthusiasm' (Kotler et al., 2002, p. 241). When it comes to visual symbols, 'a visual image needs to reinforce an image argument' (Kotler et al., 2002, p. 243). Importantly, it should be consistent with the message of the slogan. According to the author, there are four strategies/types of using visual slogans, namely *the diverse visual* (a variety of visual images about the place are used in order to emphasize the city's multidimensional character), *the consistent visual* (the opposite of the diverse visual), *the humorous visual* (the city is depicted in the humorous, witty way), and *the denying visual* (a way of diverting attention from the negative aspects of the city by overshadowing positive images).

Having explained the above, it should be remembered that events can be of a very diverse nature and character. Getz and Page (2020) divide events into: cultural celebrations, business and trade events, art and entertainment, sport and recreations events, political and state events, and private functions (p. 59). Parallel to this, it is worth to present the typology of events formally recognized by the Association for Events Management Education (AEME) (Silvers, 2004). Along with such typologies, another relevant division might be that into inspiring, affirmative, pleasant, and enriching events, as well as commemorative/incidental functions (du Cros, Jolliffe, 2014, p. 46). Excluding the last category, it seems fair to say that the ECoC is an event bearing the characteristics of all the four types. Here we should also add that in the studied context, we also acknowledge the significant differentiation between stationary and mobile events.

Another category of vital importance for this study of ours is mega-events, i.e., events such as the Olympic Games, the Football World Cup, and the World Expo. They are among the costliest and most transformative human projects (Flyvbjerg et al., 2021). These events can generate a raft of benefits and costs for the host destination, both in the short and long terms,

and are commonly regarded as catalysts for development (Cornelissen, Swart, 2006; Swart, Bob, 2007). More recently, Roche (2017) has argued that mega-events always have the capacity to surprise us and provide us with a glimpse of broader processes and tendencies at play in global life. Events are collectively memorized, and they work as reference points in communities' social calendars as well as in the broader public structuring of time (Roche, 2003). Mega-events can include three main categories of events, namely sport, culture, and business (Ritchie, 1984; Jago, Shaw, 1998; Hall, 2006; Humphreys, Prokopowicz, 2007).

Müller (2015) put out four essential criteria for mega-events: attractiveness to visitors, media reach, cost, and transformative impact. According to these criteria, mega-events are 'ambulatory occasions of a fixed duration that attract a large number of visitors, have a large, mediated reach, come with large costs, and have large impacts on the built environment and the population' (Müller, 2015, p. 8). Mega-events have historically been the domain of rich countries, but in the past ten years, an increasing number of developing nations have realized the potential of mega-events to serve as catalysts for their transition to sustainable development (Jago et al., 2010). All of these events are attractive to cities, regions, and countries as part of their policies for urban and regional development and global image-making, and bidding for and hosting such large events has become known as the 'mega-event strategy' (Burbank et al., 2001, 2002; Kassens-Noor, 2019; Roche, 1994).

The impacts of mega-events have a wide range of potential positive and negative impacts for the host destination, and they are both short- and long-term (Hiller, 2003, p. 449). Further, mega-events are increasingly used as political tools and for purposes of soft power in the international arena (Jago et al., 2010). Table 1 presents examples of various types of mega-events with consideration of their division into those that are stationary and those that are mobile.

Table 1.

Categories of mega-events with stable and changeable location

	Examples of International Events	Stable/Changeable
Art & Culture Events	Grammy Awards (Music) Oscar (Film & Theater) the Edinburgh Festival Fringe (Film & Theater) the Cannes Film Festival (Film & Theater) Art Basel (Art Visual) the European Capital of Culture Festival (Europe)	Stable Stable Stable Stable Stable Changeable
Creative & Lifestyle Events	the Rio de Janeiro Carnival-Festival (Brazil), Divaly Festival of lights (India) Festival of Lights in Lyon (France) the New York Fashion Week (USA) Octoberfest in Bavaria (Germany) World Expo (Technology)	Stable Stable Stable Stable Stable Changeable
Sport Mass Participation Events	the FIFA World Cup the Olympic Games	Changeable Changeable

Source: Own elaboration.

Case description and methodology of the research

The European Capital of Culture

Large cultural and artistic projects (mega-events) and their significance for the development of cities and regions have attracted considerable attention over the last decade, both in theory and in practice (Campbell, 2011). One of the longest-running EU cultural policies is the European Capital of Culture initiative, which annually awards the title of Capital to two or more cities that deliver cultural initiatives throughout a year of celebrations (Jones et al., 2021). This marketing mega-event has been hosted by over 60 cities throughout Europe during the last 37 years. To trace the origins of this initiative, it is necessary to go back to 1985, when the European City of Culture project was first inaugurated. The ECoC was born from a simple dream: to unite Europeans through their differences, but also through their similarities (Richards, 2000). The originator of the project was to be Melina Mercouri, the Greek Minister of Culture. The idea was to make cities the center of cultural life across Europe and culture the center of economic development at the local, national, and European levels (Iordanova-Krasteva et al., 2010). Initially, one European city was designated the ECoC each year. After the special millennium edition in 2000, in which nine cities were granted the title, two cities have been appointed annually since 2001. The first city to hold this title was Athens (1985), while Evora and Liepaja will both host ECoC in 2027 (see Table 2).

Table 2.

Cities nominated for the European Capital of Culture – key characteristics

1985-2004					2005-2019					2020-2033				
Country	Cities	Year	POPULATION	City Status	Country	Cities	Year	POPULATION	City Status	Country	Cities	Year	POPULATION	City Status
EL	Athens	1985	XL	CC	IE	Cork	2005	S-M	RC	HR	Rijeka	2020	S-M	L
IT	Florence	1986	L	RC	EL	Patras	2006	S-M	RC	IE	Galway	2020	S-M	RC
NL	Amsterdam	1987	XL	CC	LU	Luxembourg	2007	S-M	CC	RS	Novi Sad	2021	L	RC
DE	Berlin	1988	XXL	CC	RO	Sibiu	2007	S-M	L	LU	Esch	2022	S-M	LC
FR	Paris	1989	XXL	CC	UK	Liverpool	2008	L	LC	LT	Kaunas	2022	L	LC
UK	Glasgow	1990	XL	LC	NO	Stavanger	2008	S-M	L	HU	Veszprem	2023	S-M	L
IE	Dublin	1991	XL	CC	AT	Linz	2009	S-M	RC	EL	Elefsina	2023	S-M	L
ES	Madrid	1992	XXL	CC	LT	Vilnius	2009	XL	CC	RO	Timisoara	2023	L	LC
BE	Antwerp	1993	XL	RC	HU	Pecs	2010	S-M	RC	AT	Bad Ischl	2024	S-M	L
PT	Lisbon	1994	XL	CC	TR	Istanbul	2010	XXL	CC	BE	Tartu	2024	S-M	LC
LU	Luxembourg	1995	S-M	CC	DE	Essen	2010	XL	LC	NO	Bodø	2024	S-M	LC
DK	Copenhagen	1996	XL	CC	FI	Turku	2011	S-M	LC	SI	Nova Gorica	2025	S-M	L
EL	Thessaloniki	1997	L	RC	EE	Tallinn	2011	L	CC	DE	Chemnitz	2025	S-M	LC
SE	Stockholm	1998	XL	CC	PT	Guimaraes	2012	S-M	L	FI	Oulu	2026	S-M	RC
DE	Weimar	1999	S-M	LC	SI	Maribor	2012	S-M	LC	SK	Trenčín	2026	S-M	LC
FR	Avignon	2000	S-M	L	FR	Marseille	2013	XL	RS	LV	Liepaja	2027	S-M	LC
IT	Bologna	2000	L	RC	SK	Kosice	2013	S-M	LC	PT	Evora	2027	S-M	L
BE	Brussels	2000	XXL	CC	LV	Riga	2014	L	CC	CZ *		2028		
ES	Santiago	2000	S-M	RC	SE	Umeå	2014	S-M	RC	FR *		2028		
NO	Bergen	2000	L	RC	BE	Mons	2015	S-M	LC	PL * 2029				
PL	Krakow	2000	XL	RC	CZ	Pizen	2015	S-M	RC	SE *		2029		

FI	Helsinki	2000	XL	CC	ES	San Sebastian	2016	S-M	LC	CY *	2030		
IS	Reykjavik	2000	S-M	CC	PL	Wroclaw	2016	XL	RC	BE *	2030		
CZ	Prague	2000	XXL	CC	DK	Aarhus	2017	L	RC	MT *	2031		
NL	Rotterdam	2001	XL	RC	CY	Paphos	2017	S-M	L	ES *	2031		
PT	Porto	2001	S-M	RC	NL	Leeuwarden	2018	S-M	LC	BG *	2032		
ES	Salamanca	2002	S-M	LC	MT	Valletta	2018	S-M	CC	DK *	2032		
BE	Bruges	2002	S-M	L	IT	Matera	2019	S-M	L	NL *	2033		
AT	Graz	2003	L	RC	BG	Plovdiv	2019	L	LC	IT *	2033		
FR	Lille	2004	XL	LC									
IT	Genova	2004	XL	LC									
City Status CC - Country Capital RC - Regional Capital LS - Local Status L - Local							Population Groups XXL > 1 million XL 500,000 – 1 million L 250,000-500,000 S-M < 250,000						
* The city was not yet selected at the moment of submitting this article													

Source: Own investigation and elaboration based on European Commission Reports, 2021.

The ECoC program seeks to celebrate the richness and diversity of European cultures, improve the sense of cultural belonging among Europeans, highlight the cultural characteristics that all Europeans share, and promote the role that culture plays in urban development (European Commission, 1985). The program offers a variety of cultural activities targeted at incredibly diverse participant groups. The chosen city puts together an extensive calendar of cultural activities with the goal of promoting its artistic and historical legacy. The twelve months of festivities represent a fantastic opportunity to advance the city's standing on the European map (European Commission Reports, 2019). One additional ECoC will be appointed in nations that are EU candidates, potential EU candidates, or members of the European Economic Area beginning in 2021 and every three years after that. This is a recent addition to the plan (Montalto et al., 2017). This project has emerged as one of the EU Member States' and the European Commission's flagship undertakings.

The other side of this program was creating great competition in the selection process, thus giving more credibility to the event. In reality, the cities are using culture as a tool to promote the cities individually, with an accentuated city competition, while at the same time celebrating an official version of the European urban renaissance (García, 2004). As the ECoC grew in popularity and respect among Member States and cultural practitioners, real competition between cities began to emerge (Richards, 2000). Hosting the ECoC is clearly a unique opportunity for a city, which can result in positive cultural, social, and economic impact. Being a European Capital of Culture can foster social and territorial cohesion within city boundaries and beyond, and strengthen citizens' roles in the city's development as well as their participation in the shaping and making of cultural expressions. Being the ECoC can boost the long-term socioeconomic development of cities and contribute to forging an image of an attractive. The cultural activity in these cities increases and new audiences can be reached, and the city's cultural operators can acquire a more international outlook, thus improving their skills and professionalism (Montalto et al., 2019).

One of the most obvious examples of using cultural events to create a good image and long-term vision and planning for a city is the 2004 ECoC held in Genoa. These plans centered on the ECoC, which set clear deadlines and offered event and city planners the opportunity to incorporate rich, vast, and largely neglected historic urban landscapes. This strategic approach enabled the city to bring these diverse funding sources and projects together to implement a single, shared vision for the city's heritage and future (Jones, 2021). The other example is Guimares. This city was one of the cities that hosted the 2012 European Capital of Culture. One of the main outcomes of this event could be the reshaping of the image of the city, either by attenuating the most perceived negative attributes or by repositioning the city image according to the objectives and goals of the strategic communication plan tailored by the Portuguese organizers of the ECoC (Remoaldo, 2014). Finally, the 2017 ECoC case study in Paphos shows how a small town of just 35,000 people used the existing context to benefit the event. The city has revitalized culturally-focused events to integrate the region's natural, cultural, and social values, in this way, reinvent the city. Pafos 2017, the leading decision-making body, has developed a plan to use community resources to acknowledge, rather than ignore, the city's problems and build on its strengths (Dova et al., 2021).

Methodology of the research

Desk research on the legal acts on the European City of Culture and later the European Capital of Culture was conducted. Attention was paid to both the detail of the regulations and their substantive importance for candidate cities.

The period under review, 1985-2027, was divided into 3, taking into account separate regulations adopted by the European Commission. A total of 77 cities that were nominated to and became the ECoC were investigated. For subsequent periods, it was 31 cities (1985-2004), 29 cities (2005-2019), and 17 cities (2020-2027), respectively. The cities under investigation are presented on figure 1 below, taking into account the periods in which they were nominated. It was assumed that it would be reasonable to use the following forms of visualization:

- maps making it possible to assess the geographical distribution of cities, show their population size and the UNESCO status in subsequent periods,
- tables containing cities in subsequent periods along with information on their country, population size, administrative status, the UNESCO status, the place in the ranking of the Creative Cities Monitor.

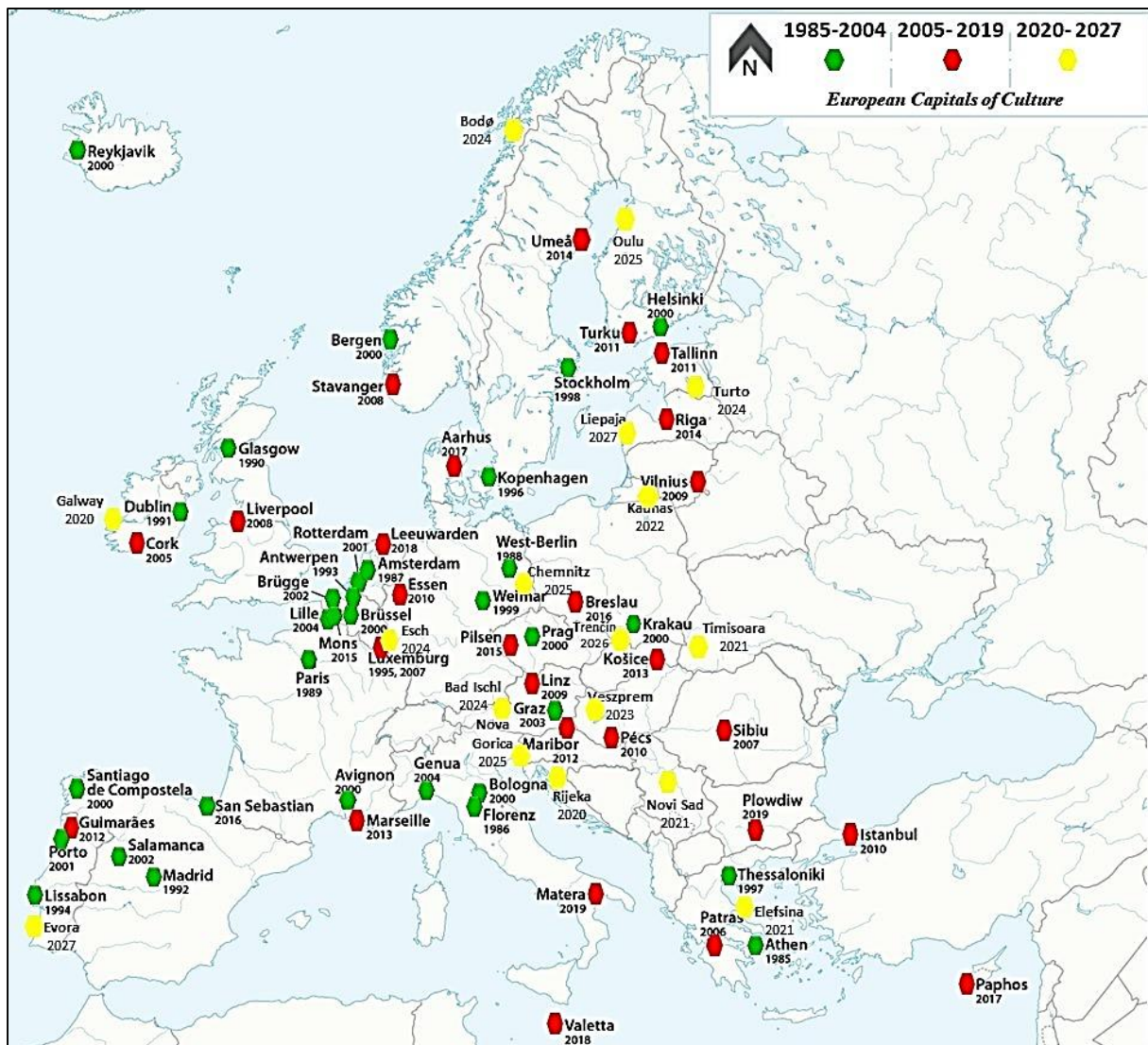


Figure 1. Location of European Capitals of Culture over the three subsequent periods.

Source: Our elaboration and investigation based on Google Maps, 2023.

It was assumed that there were differences in the profiles of the nominated cities in each analyzed period. The following characteristics of the cities were selected and became the subject of comparison:

- size of the city measured by the number of inhabitants (S-M – up to 250,000; L – 250,000-500,000; XL – 500,000-1 million; XXL – >1 million),
- the creative and cultural ranking position – the Creative and Cultural Cities Monitor 2019,
- administration status (CC – capital of the country; – CR capital of the region; LC – local capital; L – local city),
- the UNESCO status and date of its obtainment (the UNESCO World Heritage Site, the UNESCO Creative Cities Network).

Findings

The ECoC's selecting criteria

Formally speaking, the criteria that cities or regions must fulfil in order to be considered for the title of the European Capital of Culture have been changing over the years, evolving into a more inclusive and diversity-oriented framework. Below is the description of the subsequent periods and calls.

'The European City of Culture' – from 1985 onwards

Decision No. 85/C 153/02, which marked the beginning of the Initiative, was only half a page long. There were only three points: "Purpose and Content", "Selection Criteria", and "Organization and Funding". The selection criteria part only introduces the idea that a European City of Culture should be elected annually, followed by the member states hosting the event, in alphabetical order. The only criteria during this period focused on culture. In the purpose and content part, the desirable city uses the key-phrases such as 'cultural expression', 'diversity', 'helping to bring the peoples of Member States together', and 'opening up the people of Europe under special circumstances'. Between 1985 and 2005, one city was able to hold the title, but in 2000, nine cities were selected (Avignon, Bergen, Bologna, Brussels, Helsinki, Kraków, Prague, Reykjavik, Santiago de Compostela). These were all large, important and recognizable centers (e.g., Dublin, Madrid, Amsterdam, Florence, Berlin, Copenhagen, Stockholm, Athens, Porto).

The European Capital of Culture – 2005-2019

With the next call, announced in 1999 (Decision 1419/1999/EC) – and then in Decision No. 1622/2006 which slightly changed the criteria for the period 2013–2021 – the document was reduced to 2.5 pages of legal character. There were relevant details and two annexes, namely the Rules for Eligibility to be Appointed European Capital of Culture. The goal focused on identity and culture. In summary, the criteria were as follows:

“Highlight the artistic movements and styles shared by Europeans”, “Promote events in which cultural workers from other cities of the Member States participate”, “Lead towards lasting cultural cooperation”, “Creative support and develop work, ensure the mobilization and participation of a wide range of people, the population section, and the social effects of action”, “Promote the widest possible dissemination of various events”, “Promote dialogue between European cultures”, “Optimize openness and understanding of others”, “Historic heritage of the city, urban architecture”, “Take advantage of the quality of life”.

Meanwhile, two cities have won the title, with the event shifting more and more decisively to Central and Eastern Europe (CEE). This is because one of the goals was to open the door to the region. However, during this period, well-known cities were selected (Luxembourg, Linz, Liverpool) as the ECoC. Also, non-European countries (Istanbul) and lesser-known cities (Kosice, Umeå, Mons, Aarhus, Valletta, etc.) were selected. It is worth mentioning that some Cities included their surrounding areas in their programs. Therefore, cities such as Pécs, Sibius, Tallinn, Vilnius, Maribor, Riga, Kosice, Pilsen, Prodwich, and Wroclaw (Luxembourg, Liverpool, Turku) were chosen during this period.

The European Capital of Culture – 2020-2033

The currently-in-place Decision 445/2014/EU is 12-pages-long and contains a 1-page appendix containing a calendar of events to which two (or more) countries are assigned each year. In total, the document contains 17 articles. Article 5 sets out the criteria, where development has a double character. Not only are there many other points and requirements that the city must consider and meet, but these points also fall into six major categories that did not previously exist. The application's evaluation criteria, which include contribution to the long-term strategy (with includes 4 specific requirements), European dimension (with 4 specific requirements), cultural and artistic content (again, with 4 requirements under this section), capacity to deliver (with 2 requirements), outreach (with 3 requirements), and management" (5 requirements), are the same for the pre-selection and selection stages, but are more specific and differ slightly in the questions to answer and the details to provide, especially if there are changes between the two steps, as well as for the monitoring and evaluation of the long-term sustainable impact (comparisons with previous capitals can be of interest). Thus, there are 22 requirements included within 6 categories. What is more, the requirements are not simple points, but, most often, very detailed sub-statements. It is noticed in this period that the size of a city and the historical dimension is not a relevant selection criterion, and the presence of cultural heritage is not a precondition at all; a city is awarded the title based only on its future program for the ECOC year and beyond.

In this currently effective call, two or three cities (or regions) have been determined to be eligible for the title of the European Capital of Culture, and the countries are listed in the attached calendar. For the time being, cities up to 2027 have been selected and nominated. This period (2020–2027) is characterized by much smaller, less visible, lesser-known centers and far fewer inhabitants. Examples include Novi Sad, Kaunas, Tartu, Bad Ischl, Oulu, Liepaja, Timisoara and Trencin. Perhaps the most prominent nominee is Galway, Ireland (2020/2021 due to changes in how long the city holds the title during the pandemic). The corresponding criteria for the periods are shown in Table 3.

Table 3.
Selection criteria for ECoC in the subsequent periods

	1985–2004	2005–2019	2020–2033
Corresponding Criteria	One City as the ECoC	Two cities as the ECoC	Three Cities as the ECoC
	Focused on Culture	Focused on Culture and Identity	Focused on Culture and Identity
		Highlight[ing] artistic movements and styles shared by Europeans	Contribution to the long-term strategy
		Promot[ing] events involving people active in culture from other cities in Member States	European dimension
		Leading to lasting cultural cooperation	Cultural and artistic content
		Supporting and developing creative work	Capacity to deliver
		Ensuring the mobilization and participation of large sections of the population	Outreach
		Encourage[ing] the widest possible dissemination of the various events"	Management
		exerting "social impact of the action	
		Promot[ing] dialogue between European cultures	
	Optimizing the opening up to, and understanding of others as well as exploiting the historic heritage, urban architecture and quality of life in the city		

Source: Our investigation and elaboration based on European Commission Reports, 2021.

Overall, we can clearly see the development and calling of both documentation and evaluation criteria over the years. At first, these were just a few very general sentences condensed into short paragraphs. For the second public offering, the documentation was expanded and made more intentional. It contains over a dozen individual items focused on the presentation of culture and organization. After all, a tender currently in force is a clearly structured document containing detailed descriptions of the many aspects and criteria of the tender. On the one hand, there is a noticeable trend toward more bureaucratic procedures. On the other hand, it is good that it casts light on the event from multiple angles, showing its importance and seriousness. Furthermore, it emphasizes that standards are becoming more and more diverse, inclusive, and innovative.

Our first suspicion was that what began in 1985 was, for a time, a recognizable city with a strict Western mega-center and an established, or at least very likely, cultural appreciation. However, as time went on and as subsequent large and prestigious cities took the title, policymakers also needed to include smaller centers in other regions. Ultimately, the overall profile and bias are leaning toward places with great potential rather than places that everyone has heard of. Upon closer inspection, we found that we were right. In summary, each official period can be further divided into two sub-periods.

In the first one (within each major period), large centers are highlighted, while the second sub-period selects smaller or lesser-recognized cities. Moreover, the trend is upward. Thus, for each major period, it seems that a lesser-known city or region is chosen. rather than a recognizable center.

Selected characteristics of the nominated cities across subsequent periods

Size of the city measured by the number of inhabitants

In the years 1985-2004, nominations for the title of the European City of Culture were received mainly by large cities (the XL and XXL categories). More than half of the host cities are centers with more than 500,000 inhabitants, and four of them are even over a million (Berlin, Paris, Madrid, Prague). Relatively poorly represented were cities in the range of 250,000-500,000 – only 4 centers. However, in the category of small and medium-sized cities (S-M), there were 9 of them. Within the latter category, it is worth paying attention to the small but recognizable historical centers known for their heritage resources (Avignon, Porto, Bruges). Their number of inhabitants is in the range of 90,000–220,000, so it is safe to say that these are M-sized centers), not small anymore. Table 2 collects cities nominated for the European Capitals of Culture along with their key characteristics.

In the next period (2005-2019), we observe a decrease in the population of the nominated cities. Only one city belonged to the XXL category, and it was the capital of a non-European country (Istanbul). However, in the XL and L categories, there were 4 cities each. It is worth noting that as many as 18 centers, i.e., 2/3 of the set, are small and medium-sized cities (S-M), i.e., those whose population did not exceed 250,000.

Even more interesting is the structure of the collection of cities of the third group, i.e., for the period 2020-2027. Here, in the categories of large cities (XL, XXL), none of the nominated cities were included. Only 3 cities represented the category of large cities (L) and as many as 14 centers were classified as small and medium-sized cities (S–M). There are even centers with a very small population, examples of which are: Nova Gorica in Slovenia (13,000), Bad Ischl in Austria (14,000), or Greek Elefsina (25,000). This means that over 80% of the nominated cities are relatively small, which may suggest that small and medium-sized centers have a better chance in the next competitions planned till 2033. Maps 3 and 4 present the visual of the cities nominated for the European Capital of Culture in the respective periods.

The cities' administrative status

The status of the nominated cities was also analyzed. Let us remember that four categories were adopted here: the capital of the country (CC), the capital of the region (RC), the local capital (LC), and the local city (L). Out of the 77 cities nominated for the ECoC title, 23 are local capitals (city with county rights), 22 are regional capitals, and 19 are national capitals. The last category are small towns of no administrative importance in relation to the surrounding areas (13), which are named in this study as local centers. The presented results show that over 80% of the nominated cities are centers performing more than local administrative functions. Detailed data is presented in Table 2 (City Status).

However, the distribution of these categories for the three subsequent periods is interesting, as we can observe significant differences. In the first period (1985-2004), nearly half of the host cities were national capitals. The celebrations began in 1985 with the Greek city of Athens, as has been mentioned before, but in the following years, also the largest European cities were nominated – Berlin (1988), Paris (1989), Madrid (1992), or Brussels (2000). There were also strong regional centers (Rotterdam, Thessaloniki, Krakow, or Antwerp). However, in the categories of local centers, there were only 7 nominated cities. In this group, only 2 of them do not perform administrative functions for wider communities, although they were undoubtedly outstanding centers of a historical and sightseeing value (Avignon, Brugge).

The second period (2005-2019) is more stable in terms of the administrative status of the nominated cities. Nine cities were represented by regional capitals and local capitals. The other categories were much lower. It is worth emphasizing that this means that only 5 nominated cities in this period were the capitals of countries and they were all relatively small countries (Lithuania, Estonia, Malta). At the same time, there was an increase in the number (up to 5) of cities not performing administrative functions (Sibiu, Paphos, Matera).

The third period (2020-2033) mostly includes cities that have not yet celebrated the title, but have already been nominated. There is no national capital among them, and only three centers have the status of the regional capital (Timisoara, Esch, Kaunas). The vast majority of cities are local centers. They either keep the status of a local capital (9) or are only in the category of local cities (6). Thus, there has been a clear shift toward centers that do not have additional administrative functions (Elefsina, Rijeka, Evora).

Place in the ranking of creative cities – the Creative and Cultural Cities Monitor 2019

The Cultural and Creative Cities Monitor aims to help national, regional, and local policy makers identify local strengths and opportunities, and use quantitative and qualitative data to compare cities to similar urban centres. The Cultural and Creative Cities Monitor gives users the ability to compare and track the development of 190 European cities using a wide range of comparable metrics for "Cultural Vibrancy", "Creative Economy", and "Enabling Environment", while taking into account their various demographic and economic characteristics. The Cultural and Creative Cities Monitor aims to take a wide view of a "cultural and creative city" by taking into account aspects of city life and environment that are not directly related to culture and creativity. The ranking of the ECoC based on the population index is specified in Table 4, according to the said Monitor.

Table 4.*Place in the ranking of the EcoC cities in the Monitor 2019*

1985–2004				2005–2019				2020–2027			
Cities	Cultural Vibrancy	Creative Economy	Enabling Environment	Cities	Cultural Vibrancy	Creative Economy	Enabling Environment	Cities	Cultural Vibrancy	Creative Economy	Enabling Environment
Athens	5	29	33	Cork	2	33	1	Rijeka	47	53	20
Florence	1	17	34	Patras	56	54	55	Galway	3	16	1
Amsterdam	4	8	6	Luxembourg*				Novi Sad*			
Berlin	5	7	8	Sibiu	36	48	25	Esch*			
Paris	1	1	2	Liverpool	26	22	6	Kaunas	24	16	29
Glasgow	8	19	4	Stavanger				Veszprem*			
Dublin	2	22	1	Linz	21	4	14	Elefsina*			
Madrid	15	12	6	Vilnius	27	5	25	Timisoara	35	27	17
Antwerp	15	24	21	Pecs	49	22	44	Bad Ischl*			
Lisbon	1	3	23	Istanbul*				Tartu*			
Luxembourg*				Essen	35	31	26	Bodø*			
Copenhagen	3	4	3	Turku	11	24	8	Nova Gorica*			
Thessaloniki*				Tallinn	6	3	26	Chemnitz*			
Stockholm	6	2	7	Guimaraes	48	16	46	Oulu*			
Weimar	1	5	5	Maribor	46	34	19	Trenčín*			
Avignon	1	27	30	Marseille	39	34	31	Liepaja*			
Bologna	3	13	25	Kosice	50	51	49	Evora*			
Bergen*				Umeå	38	10	29				
Brussels	16	16	9	Riga	32	18	40				
Krakow	10	20	24	Mons	32	18	40				
Helsinki	6	9	11	Plzen	43	45	53				
Reykjavik*				San Sebastian	23	29	34				
Prague	2	13	15	Wroclaw	30	17	35				
Rotterdam	12	18	10	Aarhus	9	24	11				
Porto	6	5	38	Paphos*							
Salamanca	18	52	18	Leeuwarden	25	37	16				
Brugge	16	16	9	Valletta*							
Graz	4	12	9	Matera	5	20	22				
Lille	33	36	34	Plovdiv	39	37	39				
Genova	16	35	39								

*Data not available in the ranking.

Source: The Cultural and Creative Cities Monitor, 2019.

The Cultural and Creative Cities Monitor is a tool for monitoring and assessing local performance on matters relating to culture and creativity, as well as tracking changes over time.

As a tool for comparative measurement, it can identify best practises and facilitate learning for decision makers in government, business or the arts. It can motivate scholars to create new research topics and methodologies as a rich supply of data to understand the function of culture and creativity in cities. Rankings are not where the Cultural and Creative Cities Monitor adds the most value. This allows identification of city-specific advantages and obstacles to fostering culture and creativity, which can then be used as information for the development of evidence-based policies. The Cultural and Creative Cities Monitor demonstrates that there is no one "formula" to emulate, but rather a spectrum of possibilities along which each city must position itself based on a thorough understanding of its distinctive qualities as well as the priorities and goals of the relevant community.

The important findings of this monitor for 2019 prove that no single city excels on all nine dimensions and that all European cities, regardless of size, have room for improvement.

The UNESCO status and the date of its obtainment

UNESCO World Heritage Site, UNESCO Creative Cities Network

When the European Capital of Culture program started (in 1985), the only criterion for selecting cities was the focus on rich culture. It was for this reason that in the first period, most of the selected cities were rich cultural heritage (tangible and intangible). It seems that there was a strong relationship between having rich cultural heritage and being selected as the cultural capital of Europe. Fifteen cities have been on the list of UWHC which hosted the ECoC and focused on a tangible heritage site that was used as a tourist attraction. Florence, Paris, Luxembourg, Thessaloniki, Weimar, Santiago de Compostela, Avignon, Krakow, Prague, Brussels, Salamanca, and Graz have been titled as the UWHC; before that, they had hosted the ECoC. However, other cities – such as Amsterdam, Berlin, Genoa – registered after this event for the UWHC. In the case of other cities that were selected as the ECoC, the whole city is not titled the UWHC, but it has several cultural heritages (see figure 2).

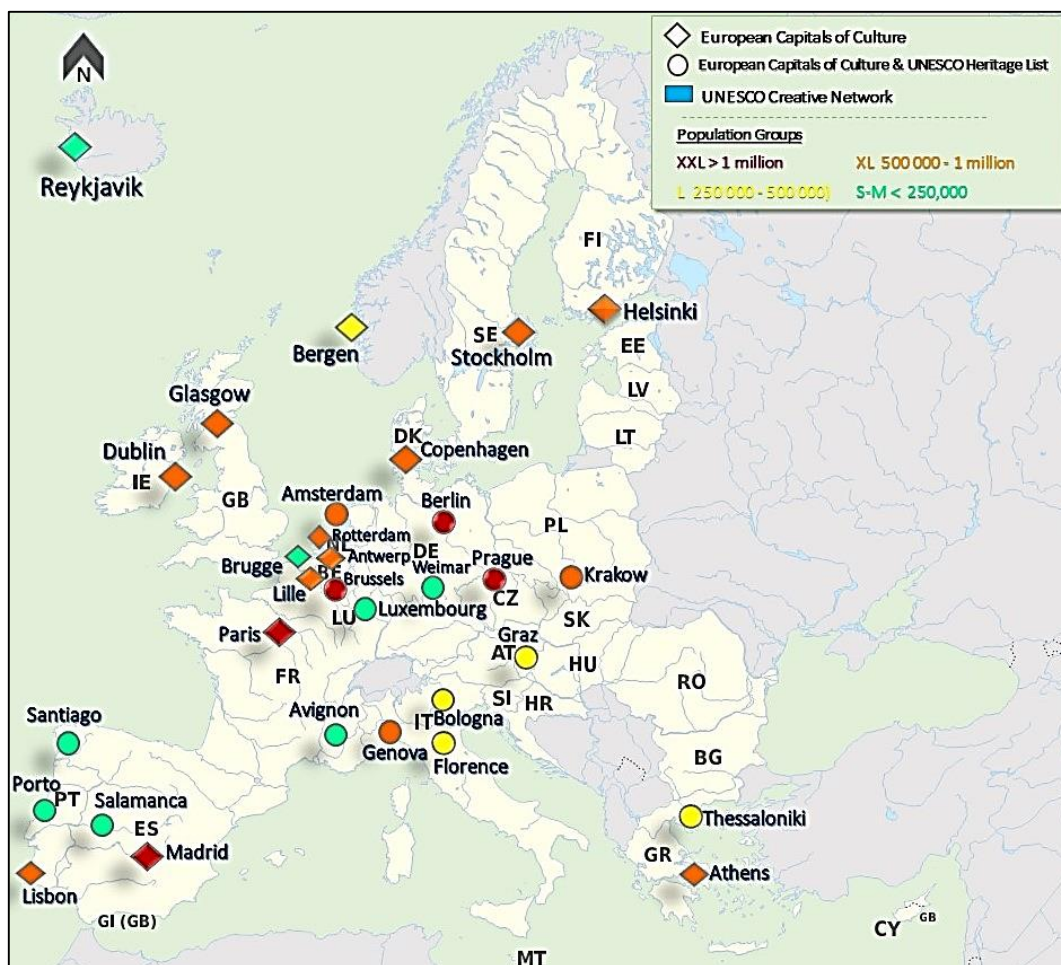


Figure 2. Cities nominated for the ECoC for the first period (1985-2004).

Source: Our elaboration and investigation based on Google Maps, 2023.

In the second period, i.e., between 2005–2019, the shift of European cultural policies from a focus only culture got redirected toward the preservation of cultural heritage and identity. From 2005 until 2019, twenty-seven cities hosted the ECoC. Luxembourg, Vilnius, Pécs, Tallinn, Guimaraes, Riga, Paphos, Valletta, and Matera had already been on the list of the UWHC before they hosted ECoC. Istanbul (non-European country), hosted ECoC in 2010 and have been in the list of UWHC since 1985. In order to identify the network of creative cities in this period, since the UNESCO's Creative Cities lunched in 2004, some of the cities were titled the UCCN, (e.g., Tallinn and Liverpool as the Creative City of Music, and Kosice and Linz in Media Arts, and Vilnius in Literature) (see figure 3).

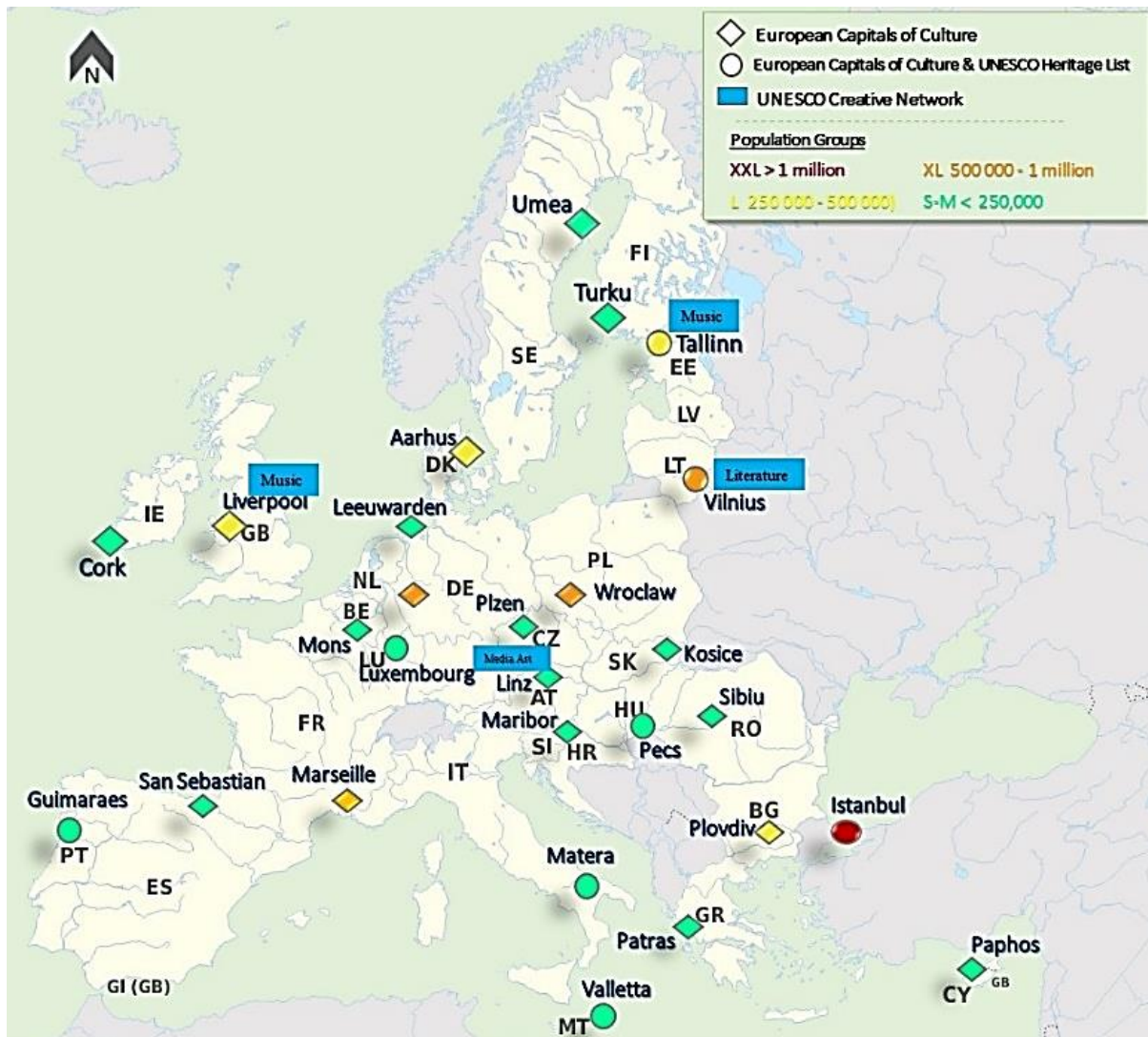


Figure 3. Cities nominated for the ECoC for the second period (2005-2019).

Source: Our elaboration and investigation based on Google Maps, 2023.

In the last period (2020-2033), the criteria indicate that the size of a city is not a relevant point. Although aimed at raising the city's international profile through culture, the presence of cultural heritage is not a precondition at all, and a city is awarded the title based only on its future program for the ECOC year and beyond. That is why none of the selected cities in this period are listed as the UWHC. The shift from a focus on conservation and identity in European cultural policy to participatory governance, intersectoral approaches, and a growing focus on the question of the relationship between culture and sustainability has led to changes in cultural governance and management. Both are reflected in the evolution of the debate (see figure 4).

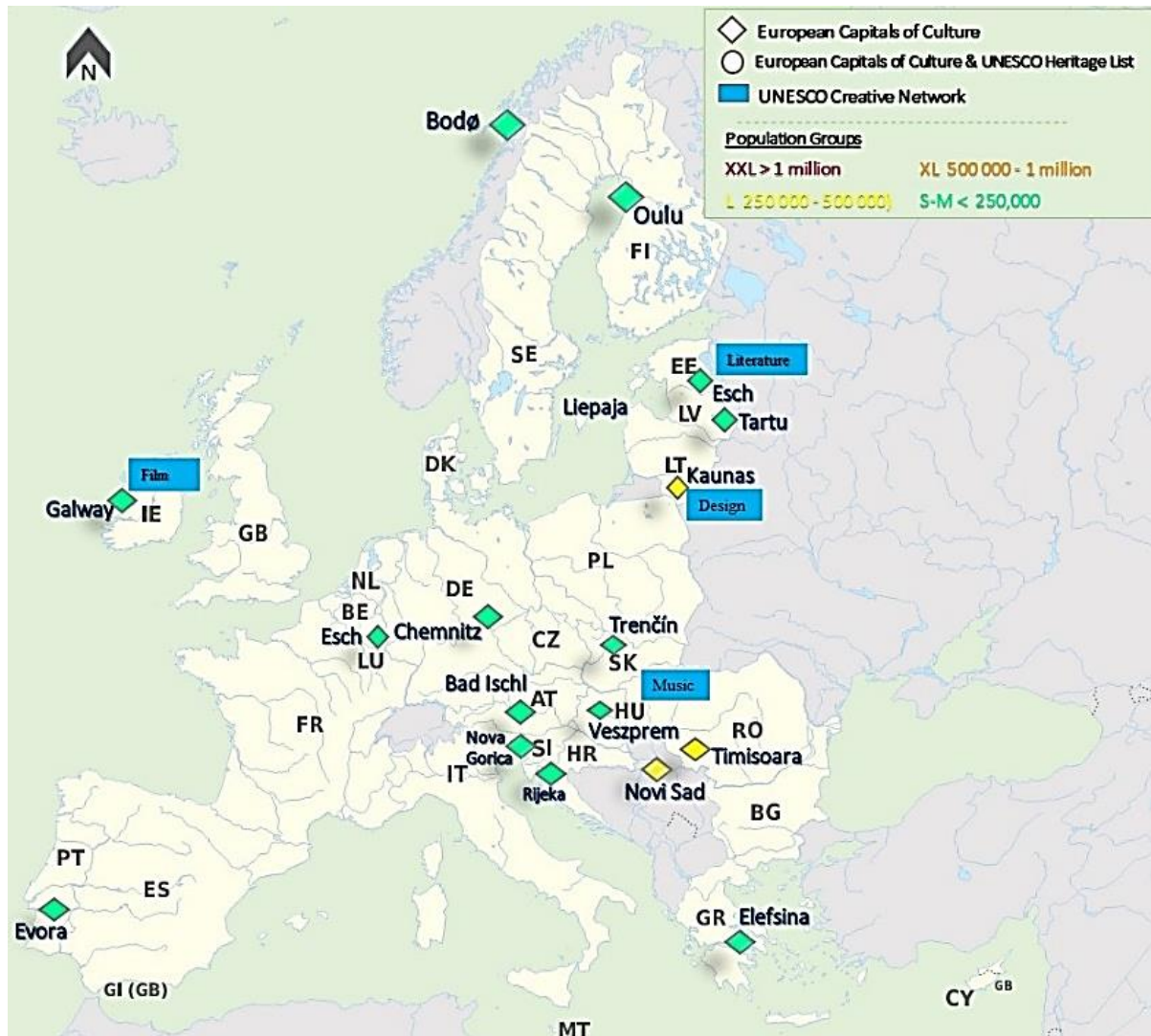


Figure 4. Cities nominated for the ECoC for the third period (2020-2027).

Source: Our elaboration and investigation based on Google Maps, 2023.

In the case of creative city in the period of 2020-2027, out of 17 cities, 4 are in the list of the UCCN: Galway in the Film sector, Veszprém in Music, Kaunas in Design, and Tartu in Literature. It is noticeable that the pandemic has partly had an effect on holding these mega-events.

Concluding remarks

A review of international literature in the field of territorial marketing and the image of the place allowed us to highlight the arguments for city authorities, confirming the legitimacy of organizing mega-events, both those with a stable location and those with a changeable location. For the host city, the value achieved is to build a positive image based on a specific subject (sport, culture, business), but indirectly also to dynamize local or regional development. Culture is becoming a more and more popular theme in place image-creation. It is also significant to acknowledge that the very bidding process might benefit the city and result in its attractiveness after all, even if the bid itself was unsuccessful (Richards, Marques, 2017). This is connected with the amount of work done with regard to the preparation of the city as well as the number of new contacts and continuing collaborations even after the bid ended (Richards, Marques, 2017).

All in all, our article made it possible to present the flagship program of the European Union created as part of its cultural policy, i.e. the European Capital of Culture (ECoC). Getting to know the essence of the program and the stages of its development in the following years allowed us to understand its specificity and significance for cities that were nominated to participate in this program in the selection process. The study focused on finding answers to the question about which cities tend to win competitions for the European Capital of Culture. Knowledge of trends in the previous nominations and the characteristics of the winners' cities will enable more rational decisions made by city authorities that are just considering taking steps toward participating in the competition. This includes countries such as the Czech Republic, France, Poland, Sweden, Cyprus, Belgium, Malta, Spain, Bulgaria, Denmark, the Netherlands and Italy, which will host the ECoC in 2028-2033.

The analysis of the size of the cities nominated for the ECoC allowed us to observe an interesting trend. In subsequent periods, the cities participating in the program are characterized by a decreasing population. While in the 1980s and 1990s, these were centers with above half a million or even more than a million inhabitants, in the coming years, the ECoC will be hosted by small cities, even those that have only several thousand permanent residents. A similar trend was observed in the administrative status of the nominated cities. While in the first period (1985-2004), nearly 80% of the nominated cities had the status of the capital of a country or regional capital, in the last analyzed period (2000-2027), over 80% of the nominated cities were just local centers. Most of the recent nominated cities are also not recognized in the Creative and Cultural Cities ranking (Monitor, 2019).

The study also addresses the theme of the cultural heritage of the nominated cities. In the international dimension, this topic is related to the activities of UNESCO and two programs of this international organization, which was originally focused on the protection of the world's cultural heritage and its preservation for future generations. Nowadays,

the UNESCO brand has become an unquestionable asset in tourism marketing. It authenticates locations around the world and elevates their rank and splendor. It is worth emphasizing that the scope of activities of this organization is the authentication of places and buildings, but also of intangible heritage.

An analysis was made in terms of the relationship between the two programs (the EcoC and the UNESCO), taking into account the order in which cities join them. During the first period of the EcoC's operation, most of the nominated cities had already been granted UNESCO Heritage Site status, or achieved it at a similar time period. This situation has changed dramatically in recent years, because in the period after 2020, none of the 17 cities nominated so far has had such a status. However, a tendency has been observed that among the recently nominated cities, the number of participants of the UNESCO Creative Cities Network – which is based on determining the cultural profile of the center, e.g., literature, film, music – is increasing. It follows that nowadays cities that want to base their brand on culture simultaneously use various marketing opportunities, trying to optimize the reaching of various groups of recipients with the message. According to the authors, the UNESCO Creative Cities Network has great potential for development for at least two reasons. First of all, being nominated for such a category is a fact that can be used based on the long-term branding strategy of the city. Secondly, it gives the opportunity to participate in a network of cities with similar cultural assets/values. Exchanging information, sharing experience, or undertaking joint marketing activities are just some of the values whose acquisition depends on the involvement of the cities participating in the network.

In the case of the European Capital of Culture program, the value of the nomination is not only the fact that the year-round celebrations are held, but also that the host city gains the EcoC brand forever, along with the opportunity to cooperate with the other participants of this great European project. It is, therefore, not surprising that many candidate cities are entering the next competitions, as they want to strengthen their international position in Europe in the field of culture through nomination.

The presented article allows us to draw the conclusion that it is currently possible to obtain nomination to be the EcoC without having world-class cultural resources, a large population, the supra-local administrative status, or even the UNESCO cultural heritage status. Therefore, the importance of alternative assets – which may consist of intangible resources of cities as well as proper management and marketing of proposed events – is growing. This paves the way for many more cities to strive for the title of the European Capital of Culture.

References

1. Burbank, M.J., Heying, C.H., Andranovich, G. (2000). Antigrowth politics or piecemeal resistance? Citizen opposition to Olympic-related economic growth. *Urban Affairs Review*, 35, 334-357.
2. Campbell, P. (2011). Creative industries in a European Capital of Culture. *International Journal of Cultural Policy*, 17(5), 510-522.
3. Cornelissen, S., Swart, K. (2006). The 2010 football world cup as a political construct: The challenge of making good on an African promise. *Sociological Review*, 54, 108-123.
4. Cowan, R. (2005). *The Dictionary of Urbanism*. London: Streetwise Press.
5. Decision 1419/1999/EC of the European Parliament and of the Council of 25 May 1999, establishing a Community action for the European Capital of Culture event for the years 2005 to 2019.
6. Decision No. 1622/2006 of the European Parliament and of the Council of 24 October 2006, establishing a Community action for the European Capital of Culture event for the years 2007 to 2019.
7. Decision No. 445/2014/EU of the European Parliament and of the Council of 16 April 2014, establishing a Union action for the European Capitals of Culture for the years 2020 to 2033, and repealing Decision No. 1622/2006/EC.
8. Dova, E., Sivitanidou, A., Anastasi, N.R., Tzortzi, J.G.-N. 2021. A mega-event in a small city: Community participation, heritage and scale in the case of Pafos 2017. European Capital of Culture. *European Planning Studies*, 1-21. <https://doi.org/10.1080/09654313.2021.1959721>.
9. Du Cros, H., Jolliffe, L. (2014). *The Arts and Events*. London: Routledge.
10. European Commission. *Proposal for a decision of the European parliament and of the Council establishing a Union action for the European Capitals of Culture for the years 2020 to 2033*. Available at: <http://ec.europa.eu/culture/our-programmes-and-actions/doc/ecoc/ec-proposal-post-2019.pdf>.
11. European Parliament (2013). *European capitals of culture: Success strategies and long-term effects*. Directorate-General for Internal Policies Culture and Education. European Union.
12. Flyvbjerg, B., Budzier, A., Lunn, D. (2021). Regression to the tail: Why the Olympics blow up. *Environment and Planning A: Economy and Space*, 53(2), 233-260. <https://doi.org/10.1177/0308518X20958724>.
13. García, B. (2004). Cultural Policy and Urban Regeneration in Western Europe Cities: Lessons from experience, Prospects for the Future. *Local Economy*, 19(4), 312-236.
14. Getz, D. (2008). Event tourism: definition, evolution and research. *Tourism Management*, 29, 403-428.

15. Hall, C.M. (2006). Urban entrepreneurship, corporate interests and sports mega-events: The thin policies of competitiveness within the hard outcomes of neoliberalism. *Sociological Review*, 54, 59-70.
16. Hiller, H. (2003). Mega-events, urban boosterism and growth strategies: An analysis of the objectives and legitimations of the Cape Town 2004 Olympic Bid. *International Journal of Urban and Regional Research*, 24(2), 449-458.
17. Humphreys, B., Prokopowicz, S. (2007). Leveraging of the Olympic Games on Mega-Sporting Events. *International Journal of Sport Management and Marketing*, 2(5/6), 496-509.
18. Iordanova-Krasteva, E., Wickens, E., Bakir, A. (2010). *The ambiguous image of Linz: Linz 2009 – European Capital of Culture*. PASCOS. Available at: <http://www.redalyc.org/pdf/881/88112773007.pdf>.
19. Jago, L., Shaw, R. (1998). Special events: A conceptual and definitional framework. *Festival Management and Event Tourism*, 5(1/2), 21-32.
20. Jago, L., Dwyer, L., Lipman, G., van Lill, D., Vorster, S. (2010). Optimising the potential of mega-events: An overview. *International Journal of Event and Festival Management*, 1(3), 220-237, <https://doi.org/10.1108/17852951011078023>.
21. Jones, Z.M., Ponzini, D. (2021). Cultural mega-events in heritage-rich cities. *Cidades*, 43. Available at: <http://journals.openedition.org/cidades/4699>.
22. Kalandides, A., Kavaratzis, M., Boisen, M., Scaramanga, M. (2012). Talking about art(s): A theoretical framework clarifying the association between culture and place branding. *Journal of Place Management and Development*, 5(1), 70-80.
23. Kotler, P., Hamlin M.A., Rein I., Haider D.H. (2002). *Marketing Asian Places. Attracting Investment, and Tourism to Cities, States and Nations*. Singapore: John Wiley & Sons (Asia) Pte Ltd.
24. *Linz 2023. Culture*. Available at: <http://www.linz.at/english/culture/3617.asp>, 29.01.2023.
25. Lynch, K.A. (1960). *Image of the City*. Cambridge, MA: MIT Press.
26. Montalto, V., Tacao Moura, C.J., Alberti, V., Panella, F., Saisana, M. (2019). *The Cultural and Creative Cities Monitor*. EUR 29797 EN. Luxembourg: Publications Office of the European Union. ISBN 978-92-76-08807-3, doi:10.2760/257371, JRC117336.
27. Montalto, V., Tacao Moura, C.J., Langedijk, S., Saisana, M. (2017). *The Cultural and Creative Cities Monitor*. doi: 10.2760/03162.
28. Müller, M. (2015). The mega-event syndrome: Why so much goes wrong in mega-event planning and what to do about it. *Journal of the American Planning Association*, 81(1), 6-17. <https://doi.org/10.1080/01944363.2015.1038292>.
29. Neacșu, M.-C. (2009). The City Image and the Local Public Administration: A Working Tool in Urban Planning. *Transylvanian Review of Administrative Sciences*, 27E, 172-188.
30. Pavlova, A., Mobilio, L., Goffredo, S., Fox, T. (eds.) (2020). *Ex-post evaluation of the 2019 European capitals of culture: final report*. European Commission, Directorate-General for

- Education, Youth, Sport and Culture. Publications Office, <https://data.europa.eu/doi/10.2766/30822>.
31. Remoaldo, P.C., Ribeiro, J.C., Vareiro, L., Santos, J.F. (2014). Tourists' perceptions of world heritage destinations: The case of Guimarães (Portugal). *Tourism and Hospitality Research*, 14(4), 206-218. <https://doi.org/10.1177/1467358414541457>.
 32. Resolution No. 85/C 153/02 of the Ministers responsible for Cultural Affairs, meeting with the Council, of 13 June 1985, concerning the annual Event 'European City of Culture'.
 33. Richards, G. (2000). The European Cultural Capital Event: Strategic Weapon in the Cultural Arms Race? *Journal of Cultural Policy*, 6(2), 159-181.
 34. Richards, G., Marques, L. (2017). Bidding for Success? Impacts of the European Capital of Culture Bid. *Scandinavian Journal of Hospitality and Tourism*, 16(2), 180-195, DOI: 10.1080/15022250.2015.1118407.
 35. Ritchie, J.R.B. (1984). Assessing the impact of hallmark events: conceptual and research issues. *Journal of Travel Research*, 23(1), 2-11.
 36. Roche, M. (1994). Mega-events and urban policy. *Annals of Tourism Research*, 21(1), 1-19. [https://doi.org/10.1016/0160-7383\(94\)90002-7](https://doi.org/10.1016/0160-7383(94)90002-7).
 37. Roche, M. (2003). Mega-Events, Time and Modernity: On Time Structures in Global Society. *Time & Society*, 12(1), 99-126. doi: <https://doi.org/10.1177/0961463X03012001370>.
 38. Roche, M. (2017.) *Mega-Events and Social Change: Spectacle, Legacy and Public Culture*. Manchester: Manchester University Press.
 39. Sanetra-Szeliga, J. (2013). The cultural sector in European integration. In: J. Hausner, A. Karwińska, J. Purchla (Eds.), *Culture and development*. Warsaw: National Center for Culture, pp. 361-380.
 40. Silvers, J.R. (2004). *Global Knowledge Domain Structure for Event Management*. Conference Proceedings, Las Vegas International Hospitality and Convention Summit. Z. Gu (Ed.). Las Vegas: University of Nevada, pp. 228-245.
 41. Swart, K., Bob, U. (2007). The eluding link: Toward developing a national sport tourism strategy in South Africa beyond 2010. *Politikon*, 34, 373-391.
 42. UNESCO (2010). Managing historic cities. In: R. van Oers, S. Haraguchi (Eds.), *World Heritage Papers*, 27. Paris: UNESCO.
 43. UNESCO World Heritage Centre (2020). Archived from the original on 30 May. Retrieved 30 May 2020.
 44. UNESCO (2008). *Operational guidelines for the Implementation of the World Heritage Convention*. Paris: UNESCO. Available at: <http://whc.unesco.org/archive/opguide08-en.pdf>, 2.02.2021.
 45. Van Puyenbroeck, T., Montalto, V., Saisana, M. (2020). Benchmarking culture in Europe: A Data Envelopment Analysis approach to identify city-specific strengths. *European Journal of Operational Research*, 288(2), 584-597.

CREATING SHARED VALUE (CSV) MEASUREMENT TOOL: CONCEPTUALIZING THE CONSTRUCT AND ITS DIMENSIONS

Anna SIBIŃSKA^{1*}, Wioletta KRAWIEC²

¹ University of Lodz, Marketing Department; anna.sibinska@uni.lodz.pl, ORCID: 0000-0002-0847-2374

² University of Lodz, Marketing Department; wioletta.krawiec@uni.lodz.pl, ORCID: 0000-0001-5619-9467

* Correspondence author

Purpose: Despite the scientific interest in Creating Shared Value concept there is still the continual lack of an appropriate scale measuring CSV. Our paper addresses the research gap by proposing the conceptualization of CSV dimensions and is an attempt for developing the measurement of CSV attributes based on insights from scholars and practitioners.

Design/methodology/approach: The conducted survey presents the findings obtained from Delphi Study with nineteen researchers and practitioners with expertise of the fields of CSR, sustainability, marketing, strategic management, and ICT. The study was used to generate the proposed construct with dimensions of value creation and items describing each dimension.

Findings: The paper provides the conceptualizing measurement construct of CSV with identification of four dimensions as social value creation (SVC), environmental value creation (EnVC), economic value creation (EVC) and innovation value creation (IVC) and sustain the notion that business organization is creating multiply values as a multi-purpose entity.

Research limitations/implications: There is a need to develop the future study employ both qualitative and quantitative methods to develop the entire CSV scale for verification of the measurement tool.

Practical implications: The paper includes the implications for managers and the managements of business organizations to assess the effects of their performances to create values for diverse groups of stakeholders.

Social implications: The paper is presenting the challenges for the modern organizations by expanding spectrum of value creation within the company for mutual benefits among an enterprise, society, and environment.

Originality/value: The paper is an attempt for CSV conceptualizing and the first stage to create and develop measuring scale of creating shared value.

Keywords: creating shared value, social value creation, economic value creation, environmental value creation, innovation value creation.

Category of the paper: Research paper.

1. Introduction

Creating shared value (CSV) in the literature is not treated as a homogeneous construct. The forerunners of CSV were Prahalad and Ramaswamy (2004), who saw in the concept an opportunity for companies to create value and develop new sources of competitive advantage. Then, Porter and Kramer introduced the term “shared value” in 2006 and defined it as *policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates* (Porter, Kramer, 2006).

According to Sinthupundaja et al. (2020) the concept of shared value reflects the relationships between business and society and points out that it gives the better utilization of resources to create value for society and the environment. It is worth underlying that these means enhance a firm competitive advantage.

Due to Menghwar and Daood (2021), CSV is defined as "a strategic process through which businesses can solve a social problem on the one hand, while on the other hand, instigating social needs and problems becomes an opportunity to create and adjust the value chain while pursuing profit" (Menghwar, Daood, 2021, 466-485). This understanding of the concept influences the choices of a key business model and the coexistence of different values and purposes. CSV can be described as the concept of a hybrid business model through which companies can gain competitive advantage by solving social problems and satisfying unmet social needs, thereby acquiring social and economic value (Khurshid, Snell, 2021).

Lots of different scientific findings support the coexisting values and multiply value creation (Gregori, Holzmann, 2020; Bilge, 2017; Patala et al., 2016). Recent research has adopted the notion of shared value creation coined by the integration of the blend value creation. Although many studies are showing the creation of shared value and reflecting the value pluralism, especially about Social Purpose Organizations (SOPs) or hybrid organizations, there is no clear attribution of dimensions of value creation and no scale to measure CSV (Castellas et al., 2019). The aim of this paper is to address this gap by presenting the results of our study to conceptualize measurement construct of CSV with the development of a set items measuring CSV. In the paper we show the findings of Delphi Study with nineteen experts to generate the construct and assign the main dimensions and items within the each one.

2. Literature Review

The concept of shared value has become a reference point highlighting the connections between the functioning of business and its operating logic and the needs of society (Porter, Kramer, 2011). Literature has pointed out the criticism of CSV referring to three main aspects: it is not original and revolutionary; it does not address tensions between business and society and there is a lack of conceptual clarification of CSV (Menghwar, Daood, 2021; Crane et al., 2014; Beschorner, Hajduk, 2017). In our study, we do not address the first element of the criticism of CSV and its lack of originality. The other two are crucial to realizing the purpose of the work, which is to indicate the logic of the operation of a business focused on the realization of multiple values.

In the contrast to the conventional idea that the firm should focus on generating economic value, CSV can also be an approach in which organizations entail jointly achieving multiple values. Previous research presents CSV as a concept related to stakeholder theory, which allows reconceptualizing the firm as a multi-purpose entity (Rubio-Andrés, del Mar Ramos-González, Sastre-Castillo, 2022). In this regard, firms can create economic and social value, but it would demand redefining the firm's purpose. Understood in this way, the purpose contradicts the notion that the primary purpose of a business firm is to create superior value for customers to gain a competitive advantage (Porter, 1990).

In many scientific considerations, the multiple purposes of a company are explained by the notion of dual institutional logic of social-economic value creation (Weerawardena et al., 2021). The transition of a view from single economic value creation to a dual social-economic value focus is caused by organization context and business environment challenges.

The dual institutional logic of the company through the creation of economic value and social value has appeared in studies on social purpose organizations (SPOs), particularly in the analysis of business model innovation processes (Klein et al., 2021). The business model of the firm gives a better understanding of the value creation process because it is defined as the holistic description of how a firm operates within its business ecosystem to create value through interdependent activities (Zott, Amit, 2010). This approach also describes the institutional logic of the business model of for-profit organizations, not just social enterprises, which is just upheld in the CSV concept. Therefore, Porter and Kramer (2011) formulated CSV as given below:

Creating Shared Value (CSV) = Economic Value Creation + Social Value Creation

Expanding further on the understanding of CSV, they explain that economic value is in the form of a company's profits gained from CSV projects, while social value is defined as meeting unmet social needs. It constitutes a new model for accomplishing business results and conjointly addressing social/environmental needs (Khurshid, Snell, 2021).

Based on Porter and Kramer's CSV original concept (Porter, Kramer, 2006), the spectrum of value creation can be depicted as economic value creation and social value creation (Porter, Kramer, 2006). However, due to the beneficiaries of value creation such as business, society, and the environment, the spectrum of shared value creation would encompass economic, social, and environmental values (Sinthupundaja et al., 2020).

Concerning the ideas of Nobel laureate and founder of the *Grameen Bank* Mohammad Yunus (2007) the assumption of adoption of explicitly social purpose by organizations refers to social enterprises. These businesses, called hybrid businesses, simultaneously seek to achieve a social purpose, and have a social-driven mission, at the same time are relying on commercial performance and are market-based businesses. In consequence, social firms are supposed to combine multiple institutional logics and create multiple values (Santos et al., 2015).

In the case of social enterprises, the redefinition of purpose and the multiplication of value creation has inferred from the conditions of their performance. It is necessary for them to seek sources of revenue generation outside of grants and public funding or philanthropic donations. Such conditions of their operation cause them to start shaping their business models through commercial activities. Mair et al. (2015) have indicated two types of hybrids organizing: conforming hybrids and dissenting hybrids. Due to conforming hybrids, they prioritize one institutional logic contrary to dissenting hybrids, that balance different logics by acting through innovation, defiance, and selective coupling.

Following the logic of value creation in social enterprises, the question arises of how this phenomenon is shaped in other organizations, which from the beginning are oriented towards commercial activities and this verifies their assumptions and mission. Further studies of shared value creation conducted on multinationals companies indicated that the discussion of reconceptualizing the current for-profit enterprises, not only SPOs, is warranted within the context of multiplication of value creation (Khurshid, Snell, 2021). It would be appropriate here to focus on the very process of creating multiplicative value in organizations regardless of the type of organization. Hence, we shall analyze a qualitative explanation of the concept of creating shared value (CSV) as the strategic process through which business organizations can turn social and environmental problems into business opportunities. In the study, creating shared value (CSV) refers to the notion that a business organization can realize multiply values at the same time for mutual benefits among an enterprise, society, and environment and reconceptualize business organizations as a multi-purpose entity. The continuing lack of an appropriate scale measuring of CSV and its dimensions prompts researchers to seek to define and conceptualize the dimensions of CSV.

Porter and Kramer (2011) pointed to the division of the areas of shared value into economic and social. In subsequent studies, researchers began to point to the areas of economic, social, and environmental value creation (Sinthupundaja et al., 2020; Paulraj, 2011; Maletic et al., 2018). The latter studies separated the creation of social value from the creation of environmental value, where such a distinction was primarily due to increasing climate change

and the need to solve problems in favor of the environment, or at least the requirements for sustainable development.

There are many studies in the literature indicating what role innovation plays in the value creation process. One perspective shows innovation and the innovation process as a catalyst for change in the economic, social and environmental value creation process. Other studies argue that the outcomes of firms' performance is the value of innovation. In our study, innovation value creation became the fourth dimension of the shared value construct although scholars discuss examples of innovation in the economic, social, and environmental domains (Lichtenthaler, 2022; Porter, Kramer, 2011; Lichtenthaler, 2017; Barczak et al., 2008; Rubio-Andrés et al., 2022).

Considering previous research on CSV as a strategic process, and the assumption of multiple activities of the organization, we have identified four areas of value creation, as outlined below in Figure 1.

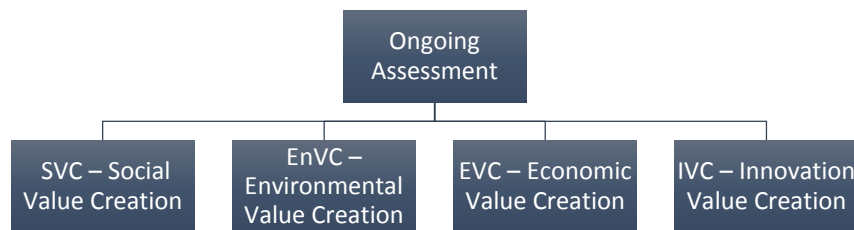


Figure 1. Shared Value Creation Dimensions.

Source: Based on literature review.

The literature review also made it possible to compile a list of factors describing a particular dimension of value creation. The list of factors by area is shown in Table 1.

Table 1.

Measurement of Shared Value Creation – Scales suggested by authors based on literature review

Dimension	Items	References
Social value creation (SVC)	<ol style="list-style-type: none"> 1. overall social welfare and betterment. 2. community health and safety 3. occupational health and safety of employees 4. reducing environmental impact and risks to the public 5. orientation for customer satisfaction 6. motivating employees 7. reducing absenteeism at work 8. creating and developing high-quality jobs 9. achieving greater skills and competence of employees 	Maletic et al., 2018 Bacq, Eddleston, 2016 Paulraj, 2011 Rubio-Andrés et al., 2022 Porter, Kramer, 2011 Gregori, Holzmann, 2020 Yang et al., 2017

Cont. table 1.

Environmental value creation (EnVC)	<ol style="list-style-type: none"> 1. reducing consumption of energy, water, fuel, and other resources 2. reducing waste and emissions from products and business processes 3. improvement of environmental conditions of the local community 4. building organizational culture based on environmental values, needs, and challenges 5. development of innovative, environmentally friendly products 6. creation proactive posture for the environmental market 7. rapid capability of anticipation the environmental changes 8. introducing circular business solutions and aims to close the material, resource, and product loop 9. providing recycling methods and solutions 10. improvement quality of habitats 11. reduction of environmental accidents 	<p>Maletic et al., 2018 Paulraj, 2011 Gregori, Holzmann, 2020 Patala et al., 2016</p>
Economic value creation (EVC)	<ol style="list-style-type: none"> 1. return on investments 2. profitability 3. good reputation 4. business growth 5. reduction of business costs 6. high sales growth 7. lower financial costs 8. earnings per share 	<p>Maletic et al., 2018 Paulraj, 2011 Rubio-Andrés et al., 2022 Gregori, Holzmann, 2020</p>
Innovation value creation (IVC)	<ol style="list-style-type: none"> 1. innovative job positions 2. improvements in management, procurement, and marketing 3. HRM innovation 4. business digitization 5. new technologies introducing 6. patents and licenses obtain 7. novelty in products, services, and processes 8. R&D spending 9. data management efficiency 10. knowledge transfer 11. product innovation 12. digital servitisation 13. innovation in the value chain 14. service innovation 15. business model innovation 16. strategic renewal 17. strategic realignment 	<p>Lichtenthaler, 2022 Porter, Kramer, 2011 Lichtenthaler, 2017 Barczak et al., 2008 Rubio-Andrés et al., 2022 Gregori, Holzmann, 2020 Bilge, 2017</p>

Source: Based on the study.

Thus, our study aims to sustain the notion that CSV enables business organizations to realize multiply values at the same time for mutual benefits among an enterprise, society, and environment. In this light, the business organization is conceptualized as a multi-value entity. Moreover, the aim of the study is an attempt to conceptualize and develop an appropriate scale for measuring CSV and its dimensions.

3. Methodology

To identify appropriate measures for CSV, a Delphi Method design has been used. Delphi study was conducted among researchers and practitioners who are experts in the fields of CSR, sustainability, social entrepreneurship, marketing, strategic management, and innovation. We followed on similar research by Kraus et al. (2017), that developed a measurement scale of social entrepreneurship orientation. To ensure that a broad range of views toward CSV existed in the study, we were including participants being experts of scholars located across Europe and North America and managers of for-profit and non-for-profit business organizations.

The invitation to the study was sent to forty experts from such countries as China, Columbia, France, Germany, Italy, the Netherlands, Poland, Spain, Great Britain (UK), the United States of America (USA), and Canada. Individual invitations were sent electronically between 12 May 2022 and 7 June 2022.

Finally, nineteen experts from Europe and North America accepted the invitation to participate in the study. The descriptive information about the characteristics of the study participant is provided in Table 2. According to the principle adopted for the Delphi method, this is enough participants (experts) to be considered sufficient and dependable for the first round of the study (i.e., from 10-18 people) (Paliwoda, 1983; Okoli, Pawłowski, 2004).

Table 2.
Sample description

Variable	Accepted response scale	Frequencies
Gender	Male	12
	Female	7
Country	Canada	1
	USA	1
	Poland	12
	Germany	3
	France	1
	Italy	1
	Institution	Academic Institutions
	For-Profit Organizations	4
	Non-For-Profit Organizations	2
Professional experience	Less than 3 years (0)	0
	3-5 years (0)	0
	6-10 years (0)	0
	11-20 years (9)	9
	More than 20 years (10)	10

Source: Own study based on the conducted research. Results at N = 19.

The Delphi method is used to determine the probability of occurrence of given phenomena and events. To increase the value of research results, the Delphi method sometimes requires several rounds of research using a questionnaire tool sent to a panel of designated competent experts to collect data (Schmidt, 1997). According to Schmidt (1997), the questionnaire is

a research tool for many different purposes in the theorizing process. In contrast, a rigorous approach to developing a tool by the accepted principles will increase the certainty with which "researchers can use the results in subsequent studies, and managers can make decisions based on the information collected using these methods" (Okoli, Pawłowski, 2004, pp. 15-29).

Therefore, the authors of the study decided on two rounds of research. However, it should be emphasized here that the results presented in this paper have come from the first round of Delphi study.

The Delphi method was chosen because of the advantages of this method in comparison with other qualitative methods. This can be carried out anonymously in relation to other panelists, so participants in the study will not be dominated in the discussion, which is often the case in focus studies. Another advantage is the fact that participants of focus studies know the date of the study in advance and must participate within this period, while the procedures for conducting Delphi research allow you to send a questionnaire by e-mail and, therefore, survey participants have a lot of time to answer individual questions (Okoli, Pawłowski, 2004). This method produces a high degree of effectiveness in terms of accuracy of judgment due to successive rounds of research that allow participants to change their opinion and have more time to review and reflect on previous answers (Rowe, Wright, 2001; Powell, 2003).

In the first round, a semi-structured questionnaire (Q) was used with open and closed questions. Open questions concerned the indication of own comments and recommendations to obtain data regarding how participants state of understanding of CSV and then how to measure the dimension.

The approach adopted in the study reflects the stages of the construct measure development process within which the generated items are evaluated for face validity and/or content validity (Churchill, 1979). Content validity is the degree to which the measurement items represent an adequate sample of the construct's theoretical content domain (Nunnally, Bernstein, 1994). The approach states that to the content validity criterion to be satisfied by the initial item pool, the items must be face valid. Face validity has been defined as the degree to which a measurement reflects what it is supposed to measure (Nunnally, Bernstein, 1994). Following Allen and Yen (1979) and Anastasi (1988) the content relevance determines the degree to which respondents judge that the items of an assessment instrument are appropriate for the construct.

The participants were asked to answer and provide plausible information and feedback to the following questions:

1. Based on your background, knowledge, and experience, explain your understanding of social value creation (SVC). Outline the main approach to the determinant of SVC.
2. How would you measure social value creation (SVC)? Please list relevant factors that measure the SVC dimension.
3. Based on your background, knowledge, and experience, explain your understanding of environmental value creation (EnVC). Outline the main approach to the determinant of EnVC.

4. How would you measure social value creation (EnVC)? Please list relevant factors that measure the EnVC dimension.
5. Based on your background, knowledge, and experience, explain your understanding of economic value creation (EVC). Outline the main approach to the determinant of EVC.
6. How would you measure economic value creation (EVC)? Please list relevant factors that measure the EVC dimension.
7. Based on your background, knowledge, and experience, explain your understanding of innovation value creation (IVC). Outline the main approach to the determinant of IVC.
8. How would you measure innovation value creation (IVC)? Please relevant factors that measure the IVC dimension.

Moreover, during the study participants were provided with the list of forty-five items retrieved from the literature study and grouped into four dimensions of CSV: social value creation (SVC), environmental value creation (EnVC), economic value creation (EVC), and innovation value creation (IVC) presented in Table 1.

The task of the experts was to assign factors according to the four dimensions listed above describing the CSV or to indicate that a given factor does not fit into any of the selected dimensions or assign to another dimension that the researchers did not consider (Ohanian, 1990). This method of assessing the nominal validity of the proposed constructs was adopted from the study used by Hardesty and Bearden (2004). It consists in, the experts should assign the items (from the initial pool of proposed items) to the appropriate dimensions. Thus, it can be concluded that the assigned items reflect the desired construct and come within the scope of the dimension (Ohanian, 1990). And thus, they will possess nominal validity. This article presents the results from the first approach to gauge the content and nominal validity of the construct.

A crucial step in the selection of items is the choice of procedure that considers the validity of the opinions of judges. Regardless of the used procedure, it is necessary to decide which items should be left for further analysis. In the study there was adopted the approach which requires at least 60% of judges to place an item in the same dimension (Allison, 1978). In the case of our study, 60% is represented by eleven judges (11.4 - rounding down due to taking full units for the study). Indications below 60% were considered to have no nominal validity (Allison, 1978).

4. Findings

Experts confirmed the validity of the SVC, EnVC and EVC dimensions as elements of the measurement construct for CSV. The IVC dimension (Q2; Q12; Q18; Q19; Q16; Q 17) raised doubts among experts. As one expert stated: *The division for the dimensions are not clear for*

me. I would not treat IVC as a dimension of CSV, I would rather say that by IVC the CSV is possible. It is happening under many different concepts like social innovation or sustainable innovation where CSV is created. Innovation is a way of achieving the goals in CSV for me not a separate area (Q17). IVC was define as to carry out innovative activities at the strategic and operational levels to increase economic, social and/or environmental value (Q18). IVC should be clocked as a prerequisite for any value creation (Q 17; Q19). However, innovation, according to the experts, is not a value. It becomes one as far as it provides new, innovative ways to solve social, environmental, or management problems. It reflects delivering goods and offerings in a way that respects social needs and environmental constraints. As a result of the emergence of new "innovative" solutions, negative externalities are not generated (social and environmental costs are avoided) (Q16, Q17). It can be concluded that IVC should be considered as a common part of the other dimensions of CSV, which allows the company to achieve social, environmental, and economic purposes.

Statements by experts indicate the emerging difficulties in measuring each dimension and the items that define them. The method of measurement can vary depending on the type of activity (Q6), but also the approach to understanding the issue of "measurement" itself. Respondents in their statements indicated measures of an objective nature based on so-called hard data (quantitative, financial approaches), but also subjective (qualitative, non-financial, perceptual approaches, etc.) (Q3, Q6, Q7, Q8). One of the experts (Q2) also suggested that the measurement of CSV factors in the SVC and EnVC areas should be based on a monetary approach, and thus make it possible to compare the effects of activities in these areas with the effects of activities in the EVC area.

In the first round of the survey, experts were presented with a list of 45 CSV factors. Their task was to assign a given factor to the extracted four CSV dimensions or reject it. A score of 60% of the indications (11 indications) or more was considered reasonable and to assign the factor to a CSV dimension.

Table 3.

List of factors examined by experts with results based on their statements. The list is organized and based on the indications of experts

Items (45)		Attributing dimension from literature	Attributing dimension by experts					Discrepancy with literature	Accepted/rejected items for the next test round
			SVC	EnVC	EVC	IVC	No fit in any of dimensions		
1.	overall social welfare and betterment	SVC	18	7	6	6		Accepted	
2.	community health and safety	SVC	19	5	6	4	1	Accepted	
3.	occupational health and safety of employees	SVC	19	5	4	2		Accepted	

Cont. table 3.

4.	reducing environmental impact and risks to the public	SVC	6	19	2	4		EnVC	Accepted*
5.	orientation for customer satisfaction	SVC	6	2	15	5	1		Accepted
6.	motivating employees	SVC	10	1	9	2	2		Rejected*
7.	reducing absenteeism at work	SVC	9	1	10	1	2	SVC/EVC	Rejected*
8.	creating and developing high-quality jobs	SVC	13	2	9	7	1		Accepted
9.	achieving greater skills and competence of employees	SVC	13	1	12	5	2		Accepted*
10.	reducing consumption of energy, water, fuel, and other resources	EnVC	5	19	4	5			Accepted
11.	reducing waste and emissions from products and business processes	EnVC	5	19	3	4			Accepted
12.	improvement of environmental conditions of the local community	EnVC	9	17	4	4			Accepted
13.	building organizational culture based on environmental values, needs, and challenges	EnVC	9	14	2	4	2		Accepted
14.	development of innovative, environmentally friendly products	EnVC	3	15	5	16	1	EnVC/IVC	Accepted*
15.	creation proactive posture for the environmental market	EnVC	4	15	5	7	2		Accepted
16.	rapid capability of anticipation the environmental changes	EnVC	3	12	5	10	2		Accepted
17.	introducing circular business solutions and aims to close the material, resource, and product loop	EnVC	2	18	6	7			Accepted
18.	providing recycling methods and solutions	EnVC	1	18	4	6			Accepted
19.	improvement quality of habitats	EnVC	13	11	1	4		SVC	Accepted*
20.	reduction of environmental accidents	EnVC	6	17	4	1			Accepted

Cont. table 3.

21.	return on investments	EVC	0	0	18	3	1		Accepted
22.	profitability	EVC	0	0	18	3	1		Accepted
23.	good reputation	EVC	9	3	15	0	2		Accepted
24.	business growth	EVC	3	1	17	5	1		Accepted
25.	reduction of business costs	EVC	1	1	18	2	1		Accepted
26.	high sales growth	EVC	1	0	17	3	1		Accepted
27.	lower financial costs	EVC	1	1	18	2	1		Accepted
28.	earnings per share	EVC	0	0	17	0	1		Accepted
29.	innovative job positions	IVC	2	0	6	18			Accepted
30.	improvements in management, procurement, and marketing	IVC	2	0	13	10	3	EVC	Accepted*
31.	HRM innovation	IVC	4	1	9	13	2		Accepted
32.	business digitization	IVC	3	3	12	13	2		Accepted
33.	new technologies introducing	IVC	3	3	7	19	2		Accepted
34.	patents and licenses obtain	IVC	0	0	6	17	2		Accepted
35.	novelty in products, services, and processes	IVC	0	0	5	17	2		Accepted
36.	R&D spending	IVC	3	2	5	15	2		Accepted
37.	data management efficiency	IVC	1	2	11	9	2	EVC	Accepted*
38.	knowledge transfer	IVC	4	3	8	13	3		Accepted
39.	product innovation	IVC	1	2	7	15	1		Accepted
40.	digital servitisation	IVC	4	3	7	14	2		Accepted
41.	innovation in the value chain	IVC	2	4	6	17	1		Accepted
42.	service innovation	IVC	2	2	4	17	1		Accepted
43.	business model innovation	IVC	3	3	6	16	1		Accepted
44.	strategic renewal	IVC	2	2	7	12	4		Accepted
45.	strategic realignment	IVC	2	2	8	10	3		Rejected

* items that require further verification through lack of clarity of dimension assignment. N = 19.

Source: own study on research.

It can be observed that there are deviations in the assigned items to the dimensions based on the literature (Table 3). The largest discrepancy with the literature was observed with the SVC dimension. The items (items 1-9 in Table 3) in the literature were attributed to the SVC dimension, however, item 4 (Table 3) was observed to be attributed to the EnVC dimension, item 6, 7 and 9 are on the borderline of the SVC/EVC dimensions, item 14 was attributed in similar numbers to the EnVC and IVC dimensions, item 19 was attributed to the SVC dimension with the majority of responses, and item 30 and 37 were attributed to the EVC dimension.

All dimensions on the borderline of other dimensions or assigned to dimensions other than those in the original analysis of the literature review, and retained the 60% indications rule (Allison, 1978) go forward for further verification in the next round of the Delphi method.

Forty-two items were accepted for further determination of the nominal validity of the proposed item pool. Three items did not meet the 60% rule and were therefore rejected as items that did not represent the nominal validity of the construct being created.

It should be mentioned that during the study, one of the experts additionally proposed a new dimension, which was called EmVC (Employer Value Creation). Items numbered 6, 8, 13, 7, 31 (according to Table 3) were assigned to this dimension. On the other hand, the current stage of the study and the verification procedure adopted, do not give grounds to consider the EmVC dimension and the indicated items, as content-valid for the construct under construction. Nevertheless, the authors of the article intend to investigate this phenomenon in further rounds of the study. While the study, there were also doubts about the assignment of items to any of the proposed CSV dimensions. However, these doubts do not account for a large number of expert indications.

5. Discussion

As a result of the research undertaken, based on the Delphi Study among nineteen experts, the CSV construct and its main dimensions were acknowledged regarding social value creation (SVC), economic value creation (ECV) and environmental value creation (EnVC). The indicated dimensions of the construct first confirm the identified areas of social and economic value of Porter and Kramer's (2011) concept, and justify the items indicated from previous studies within SVC, EVC and EnVC (Maletic et al., 2018; Paulraj, 2011; Gregori, Holzmann, 2020; Patala et al., 2016).

The feedback received from experts as to the identification of the main dimensions yielded miscellaneous about innovation value creation (IVC) and pointed out discrepancies with the literature review (Lichtenthaler, 2017; Rubio-Andrés et al., 2022; Gregori, Holzmann, 2020). Besides that, it was unexpected finding, this observation made the especially important and relevant contribution to the entire construct and measurement of CSV. Hence, the researchers upheld the opinion of the experts (5 indications) and decided to verify IVC dimension during further research towards acknowledgement this dimension as a as a full-fledged dimension. Due to expert opinions the actions taken by companies towards creating innovations are a way to generate economic, social, and environmental value for external and internal stakeholder groups.

Based on the results of the study, the following items were excluded for further analysis: reducing absenteeism at work (SVC), motivating employees (SVC) and strategic realignment (IVC). For further discussion there is proposed additional dimension as EmVC (Employer Value Creation).

In line with the literature, there were observed the discrepancies of attributing five items to the dimension. Indications from experts show ambiguity as to the assignment of items such as 1. reducing environmental impact and risks to the public (attributing to EnVC), 2. development of innovative environmentally friendly products (attributing to IVC), 3. improvement quality of habitats (attributing to SVC), 4. improvements in management, procurements, and marketing (attributing to EVC), 5. data management efficiency (attributing to EVC).

Ambiguity was not achieved in assigning the item as achieving greater skills and competences, with remarkably similar findings attributing to SVC and EVC dimensions. Item business digitalization was also considered by experts as a factor relating to two dimensions: EVC and IVC.

6. Conclusion

The results obtained from the Delphi survey are the baseline for further development of the CSV scale measurement. The CSV construct developed because of the literature review has changed slightly comparably to experts' indications both about the content validation of the SVC, EVC, EnVC and IVC dimensions and items attributing. Some experts questioned the validity of IVC as an area of CSV.

In summary, after round one of the Delphi methods, the developed CSV construct was decomposed. SVC dimension has include six items (in contrary to nine items selected from the literature), EnVC obtained ten items (in contrary to eleven items selected from the literature), EVC dimension has 11 items (in contrary to eight items selected from the literature) and finally IVC dimension was assigned by 15 items instead of seventeen retrieved from the related literature study.

Our findings allow us to make the contribution to literature on creating shared value and value creation for sustainability. Our findings provide a first step to help understand spectrum of value creation within the company for mutual benefits among an enterprise, society, and environment and sustain the notion that the company is going to be treated as multi value entity.

Practitioners are advised to study the CSV construct and its dimensions and discuss if the obtained tool can be applicable for their business context. Especially when formulating the visions, multiply purposes managers can consider the impact of each dimension on the different group stakeholders. Policymakers are advised to take into consideration the consequences for

their policies on local, regional, and global level. They represent the stakeholders for the companies and CSV would have direct influence on the public – private partnerships and its contribution to resolving social and environmental problems.

The empirical setting of this study involves certain limitations. The results presented in the article are the findings obtained from the first round of the study. Therefore, they should not yet be considered final regarding the dimensions describing CSV, as well as the choice of items describing them. Although the requirement of the number of experts participating in the study has been met (Okoli, Pawlowski, 2004), it would be necessary to repeat the at a later stage (Hardesty, Bearden, 2004). Referring to the principles of developing a reliable scale for constructed dimensions, it would be advisable in subsequent stages of the study to use a different procedure for selecting items (Zaichkowsky, 1985). This has the effect of increasing the reliability of the constructed CSV measurement construct.

Another important aspect of the research method adopted is to ensure the validity of the construct being built. Accordingly, a necessary step in Delphi research is to determine content validity, or nominal validity. However, these steps are not sufficient for a measurement to have construct validity.

Thus, the determined items should pass still other validity tests, e.g., discriminant validity, convergent validity, and predictive validity (Hardesty, Bearden, 2004).

References

1. Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, Vol. 17, Iss. 1, pp. 90-120, doi: <https://doi.org/10.1177/014920639101700108>.
2. Paulraj, A. (2011). Understanding the relationship between internal resources and capabilities, Sustainable supply management and organizational Sustainability. *Academy of management Journal*, Vol. 47, Iss. 1, pp. 19-37, doi: <https://doi.org/10.1111/j.1745-493X.2010.03212.x>.
3. Allen, M.J., Yen, W.M. (1979). *Introduction to measurement theory*. Monterey (CA): Brooks/Cole.
4. Allison, N.K. (1978). A psychometric development of a test for consumer alienation from the marketplace. *Journal of Marketing Research*, Vol. 15, Iss. 4, pp. 565-575, doi: <https://doi.org/10.1177/00222437780150040>.
5. Anastasi, A. (1988). *Psychological testing*. New York: Macmillan.
6. Atuahene-Gima, K. (1996). Market Orientation and Innovation. *Journal of Business Research*, Vol. 35, Iss. 2, pp. 93-103, doi: [http://dx.doi.org/10.1016/0148-2963\(95\)00051-8](http://dx.doi.org/10.1016/0148-2963(95)00051-8).

7. Aupperle, K. (1984). An empirical measure of corporate social orientation. *Research in Corporate Social Performance and Policy*, Vol. 6, pp. 27-54.
8. Bacq, S., Eddleston, K.A. (2016). A Resource-Based View of Social Entrepreneurship: How Stewardship Culture Benefits Scale of Social Impact. *Journal of Business Ethics*, Vol. 152, Iss. 3, pp. 589-611, doi: <https://doi.org/10.1007/s10551-016-3317-1>.
9. Barczak, G., Griffin, A., Kahn, K.B. (2008). Trends and Drivers of Success in NPD Practices: Results of the 2003 PDMA Best Practices Study. *Journal of Product Innovation Management*, Vol. 26, Iss. 1, pp. 3-23, doi: <https://doi.org/10.1111/j.1540-5885.2009.00331.x>.
10. Beschoner, T., Hajduk T. (2017). Creating shared value. A fundamental critique. In: *Creating Shared Value: Concepts, Experience, Criticism* (pp. 27-37). Cham: Springer, doi: DOI:10.1007/978-3-319-48802-8_3.
11. Bilge, P. (2017). *Sustainable value creation by applying industrial engineering principles and methodologies*. Retrieved from: <https://depositonce.tu-berlin.de/handle/11303/6357>.
12. Bloom, P., Smith, B. (2010). Identifying the drivers of social entrepreneurial impact: Theoretical development and an exploratory empirical test of SCALERS. *Journal of Social Entrepreneurship*, Vol. 1, Iss. 1, pp. 126-145, doi: <https://doi.org/10.1080/19420670903458042>.
13. Bruneel, J., Moray, N., Stevens, R., Fassin, Y. (2016). Balancing competing logics in for-profit social enterprises: A need for hybrid governance. *Journal of Social Entrepreneurship*, Vol. 7, Iss. 3, pp. 263-288, doi: <https://doi.org/10.1080/19420676.2016.1166147>.
14. Liu, C.-H. (2017). Creating competitive advantage: Linking perspectives of organization learning, innovation behavior and intellectual capital. *International Journal of Hospitality Management*, Vol. 66, pp. 13-23, doi: <https://doi.org/10.1016/j.ijhm.2017.06.013>.
15. Castellás, E.I., Stubbs, W., Ambrosini, V. (2019). Responding to Value Pluralism in Hybrid Organizations. *Journal of Business Ethics*, Vol. 159, pp. 635-650, doi: <https://doi.org/10.1007/s10551-018-3809-2>.
16. Chang, Y.-C., Chang, H.-T., Chi, H.-R., Chen, M.-H., Deng, L.-L. (2012). How do established firms improve radical innovation performance? The organizational capabilities view. *Technovation: the international journal of technological innovation, entrepreneurship and technology management*, Vol. 32, Iss. 7-8, pp. 441-451, doi: <https://doi.org/10.1016/j.technovation.2012.03.001>.
17. Chaurasia, S.S., Kaul, N., Yadav, B., Shukla, D. (2020). Open innovation for sustainability through creating shared value-role of knowledge management system, openness and organizational structure. *Journal of Knowledge Management*, Vol. 24, No. 10, pp. 2491-2511, doi: <https://doi.org/10.1108/JKM-04-2020-0319>.
18. Churchill, G. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, Vol. 16, Iss. 1, pp. 64-73, doi: <https://doi.org/10.1177/002224377901600110>.

19. Crane, A., Palazzo, G., Spence, L.J., Matten, D. (2014). Contesting the value of creating shared value. *California Management Review*, Vol. 56, Iss. 2, pp. 130-153, doi: <https://doi.org/10.1525/cmr.2014.56.2.130>.
20. De Guimarães, J.C., Severo, E.A., de Vasconcelos, C.R. (2018). The influence of entrepreneurial, market, knowledge management orientations on cleaner production and the sustainable competitive advantage. *Journal of Cleaner Production*, Vol. 174, pp. 1653-1663, doi: <https://doi.org/10.1016/j.jclepro.2017.11.074>.
21. Graafland, J.J., Eijffinger, S.C., Smid, H. (2004). Building Ethical Institutions for Business: Sixteenth Annual Conference of the European Business Ethics Network (EBEN) || Benchmarking of Corporate Social Responsibility: Methodological Problems and Robustness. *Journal of Business Ethics*, Vol. 53, Iss. 2, pp. 137-152, doi: <https://doi.org/10.1023/B:BUSI.0000039404.67854.e1>.
22. Gregori, P., Holzmann, P. (2020). Digital sustainable entrepreneurship: A business model perspective on embedding digital technologies for social and environmental value creation. *Journal of cleaner production*, Vol. 272, doi: DOI:10.1016/j.jclepro.2020.122817.
23. Hardesty, D.M., Bearden, W.O. (2004). The use of expert judges in scale development: implications for improving face validity of measures of unobservable constructs. *Journal of Business Research*, Vol. 57, Iss. 2, pp. 98-107, doi: [https://doi.org/10.1016/S0148-2963\(01\)00295-8](https://doi.org/10.1016/S0148-2963(01)00295-8).
24. Xiao, H., Yu, D. (2020). Achieving Sustainable Competitive Advantage Through Intellectual Capital and Corporate Character: The Mediating Role of Innovation. *Problemy ekorozwoju*, Vol. 15, No. 1, pp. 33-45, doi:<https://doi.org/10.35784/pe.2020.1.04>.
25. Hurley, R.F., Hult, G.T. (1998). Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing*, Vol. 62, Iss. 3, pp. 42-54, doi: <https://doi.org/10.1177/002224299806200303>.
26. How Johnson & Johnson promotes environmental and social responsibility throughout its supply chain, SustainCase. *Sustainability Magazine*, 20.08.2022.
27. Khurshid, H., Snell, R.S. (2021). Examining mechanisms for creating shared value by Asian firms. *Journal of Business Research*, Vol. 129, pp. 122-133, doi: <https://doi.org/10.1016/j.jbusres.2021.02.030>.
28. Klein, S., Schneider, S., Speith, P. (2021). How to stay on the road? A business model perspective on mission drift in social purpose organisation. *Journal of Business Research*, Vol. 125, pp. 658-671, doi: <https://doi.org/10.1016/j.jbusres.2020.01.053>.
29. Kratzer, J., Meissner, D., Roud, V. (2017). Open innovation and company culture: Internal openness makes the difference. *Technological Forecasting and Social Change*, Vol. 119, pp. 128-138, doi: <https://doi.org/10.1016/j.techfore.2017.03.022>.
30. Kraus, S., Niemand, T., Halberstadt, J., Shaw, E., Syrjä, P. (2017). Social entrepreneurship orientation: development of a measurement scale. *International Journal of Entrepreneurial*

- Behavior & Research*, Vol. 23, Iss. 6, pp. 977-997, doi: <https://doi.org/10.1108/IJEBR-07-2016-0206>.
31. Lenssen, G., Spitzeck, H., Chapman, S. (2012). Creating shared value as a differentiation strategy – the example of BASF in Brazil. *Corporate Governance: The international journal of business in society*, Vol. 12, Iss. 4, pp. 499-513, doi:10.1108/14720701211267838.
 32. Lichtenthaler, U. (2017). Shared value innovation: linking competitiveness and societal goals in the context of digital transformation. *International Journal of Innovation and Technology Management*, Vol. 14, Iss. 4, pp. 1-14, doi: <https://doi.org/10.1142/S0219877017500183>.
 33. Lichtenthaler, U. (2022). Data management efficiency: major opportunities for shared value innovation. *Management Research Review*, Vol. 45, No. 2, doi:10.1108/MRR-10-2020-0639.
 34. Gnap, M. (2018). Triple Bottom Line = CSR, Triple Bottom Line = CSR. Retrieved from: <https://pl.linkedin.com/pulse/triple-bottom-line-csr-marek-gnap>, 13.06.2018.
 35. Madan J. (2018). *Klienci oczekują od firm zaangażowania w obszary ESG. Środowisko naturalne, społeczeństwo i ład korporacyjny ważne w prowadzeniu biznesu*. Retrieved from: [Zhttps://strefabiznesu.pl/klienci-oczekuja-od-firm-zaangazowania-w-obszary-esg-srodowisko-naturalne-spoleczenstwo-i-lad-korporacyjny-wazne-w-prowadzeniu/ar/c3-16457927](https://strefabiznesu.pl/klienci-oczekuja-od-firm-zaangazowania-w-obszary-esg-srodowisko-naturalne-spoleczenstwo-i-lad-korporacyjny-wazne-w-prowadzeniu/ar/c3-16457927), 13.06.2018.
 36. Mair, J., Mayer, J., Lutz, E. (2015). Navigating institutional plurality: organizational governance in hybrid organizations. *Organization Studies*, Vol. 36, pp. 713-739, doi: <https://doi.org/10.1177/0170840615580007>.
 37. Maletic, M., Maletic, D., Gomisek, B. (2018). The Role of Contingency Factors on the Relationship between Sustainability Practices and Organizational Performance. *Journal of Cleaner Production*, Vol. 171, pp. 423-433, doi: <https://doi.org/10.1016/j.jclepro.2017.09.172>.
 38. Menghwar, P.S., Daood, A. (2021). Creating shared value: A systematic review, synthesis and integrative perspective. *International Journal of Management Review*, Vol. 23, Iss. 4, pp. 466-485, doi: <https://doi.org/10.1111/ijmr.12252>.
 39. Mezias, J.M., Starbuck, W.H. (2003). The Odyssey Continues. *British Journal of Management*, Vol. 14, Iss. 1, pp. 45-47, doi: <https://doi.org/10.1111/1467-8551.00264>.
 40. Nunnally, J.C., Bernstein, I.H. (1994). *Psychometric theory*. New York: McGraw-Hill.
 41. Okoli Ch., Pawłowski S.D. (2004). The Delphi method as a research tool: an example, design considerations and applications. *Information & Management*, Vol. 1, Iss. 42, pp. 15-29, doi: <https://doi.org/10.1016/j.im.2003.11.002>.
 42. Paliwoda, S.J. (1983). Predicting the future using Delphi. *Management Decision*, Vol. 21, Iss. 1, pp. 31-38, doi: <https://doi.org/10.1108/eb001309>.
 43. Patala, S., Jalkala, A., Keranen, J., Vaisanen, S., Tuominen, V., Soukka, R. (2016). Sustainable value propositions. Framework and implications for technology suppliers.

- Industrial Marketing Management*, Vol. 59, pp. 144-156, doi: DOI:10.1016/J.INDMARMAN.2016.03.001.
44. Pfitzer, M., Bockstette, V., Stamp, M. (2013). Innovating for shared value. *Harvard Business Review*, Vol. 9. Retrieved from: <https://hbr.org/2013/09/innovating-for-shared-value>, 1.09.2013.
 45. Porter, M.E. (1990). *The competitive advantage of nations*. New York: Free Press.
 46. Porter, M.E., Kramer, M.E. (2011). Creating Shared Value. How to reinvent capitalism and unleash a wave of innovation and growth. *Harvard Business Review*, Vol. 89, Iss. 1/2, pp. 62-77. Retrieved from: [Creating Shared Value \(hbr.org\)](https://hbr.org/2011/09/creating-shared-value).
 47. Porter, M., Kramer, M. (2002). The competitive advantage of corporate philanthropy. *Harvard Business Review*. Retrieved from: <https://hbr.org/2002/12/the-competitive-advantage-of-corporate-philanthropy>.
 48. Porter, M., Kramer, M. (2019). Creating shared value. In: G. Lenssen, N. Smith, (Eds.), *Managing Sustainable Business* (pp. 323-346). Dordrecht: Springer, doi: https://doi.org/10.1007/978-94-024-1144-7_16.
 49. Porter, M.E., Kramer, M.R. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard Business Review*, Vol. 85, No. 12, pp. 78-92, doi: <https://doi.org/10.1108/sd.2007.05623ead.006>.
 50. Powell, C. (2003). The Delphi technique: myths and realities. *Journal of Advanced Nursing*, Vol. 41, Iss. 4, pp. 376-382, doi: doi: 10.1046/j.1365-2648.2003.02537.x.
 51. Prahalad, C.K., Ramaswamy, V. (2004). Co-creation experiences: the next practice in value creation. *Journal of Interactive Marketing*, Vol. 18, Iss. 3, pp. 5-14, doi: <https://doi.org/10.1002/dir.20015>.
 52. Rowe, G., Wright, G. (2001). Expert Opinions in Forecasting: The Role of the Delphi Technique. In: J.S. Armstrong (Eds.), *Principles of Forecasting. International Series in Operations Research & Management Science*, Vol. 30. Boston, MA: Springer. https://doi.org/10.1007/978-0-306-47630-3_7.
 53. Rubio-Andrés, M., del Mar Ramos-González, M., Sastre-Castillo, M.Á. (2022). Driving innovation management to create shared value and sustainable growth. *Review of Managerial Science*, Vol. 16, Iss. 7, pp. 2181-221, doi: <https://doi.org/10.1007/s11846-022-00520-0>.
 54. Šályová, S., Táborecká-Petrovičová, J., Nedelová, G., Ďaďo, J. (2015). Effect of Marketing Orientation on Business Performance: A Study from Slovak Foodstuff Industry. *Procedia Economics and Finance*, Vol. 34, pp. 622-629, doi: [https://doi.org/10.1016/S2212-5671\(15\)01677-9](https://doi.org/10.1016/S2212-5671(15)01677-9).
 55. Sanders, N.R. (2007). An empirical study of the impact of e-business technologies on organizational collaboration and performance. *Journal of Operations Management*, Vol. 25, Iss. 6, pp. 1332-1347, doi: <https://doi.org/10.1016/j.jom.2007.01.008>.

56. Santos, F., Pache, A.C., Birkholz, C. (2015). Making hybrids work: aligning business models and organizational design for social enterprises. *California Management Review*, Vol. 57, Iss. 3, pp. 36-58, doi: <https://doi.org/10.1525/cmr.2015.57.3.36>.
57. Schmidt, R.C. (1997). Managing Delphi surveys using nonparametric statistical techniques. *Decision Sciences*, Vol. 28, Iss. 3, pp. 763-774. doi: <https://doi.org/10.1111/j.1540-5915.1997.tb01330.x>.
58. Severo, E.A., de Guimarães, J.C.F., Dorion, E.C.H., Nodari, C.H. (2015). Cleaner production, environmental sustainability and organizational performance: an empirical study in the Brazilian Metal-Mechanic industry. *Journal of Cleaner Production*, Vol. 96, pp. 118-125, doi: <https://doi.org/10.1016/j.jclepro.2014.06.027>.
59. Shane, S., Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, Vol. 25, No. 1, pp. 217-226, doi: <https://doi.org/10.5465/amr.2000.2791611>.
60. Sinthupundaja, J., Kohda, Y., Chiadamrong, N. (2020). Examining capabilities of social entrepreneurship for shared value creation. *Journal of Social Entrepreneurship*, Vol. 11, Iss. 1, pp. 1-22, doi: <https://doi.org/10.1080/19420676.2018.1543726>.
61. Smets, M., Jarzabkowski, P., Burke, G.T., Spee, P. (2015). Reinsurance trading in Lloyd's of London: Balancing conflicting-yet-complementary logics in practice. *Academy of Management Journal*, Vol. 58, Iss. 3, pp. 932-970, doi: [10.5465/amj.2012.0638](https://doi.org/10.5465/amj.2012.0638).
62. Tetlock, P.E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, Vol. 50, Iss. 4, pp. 819-827, doi: <https://doi.org/10.1037/0022-3514.50.4.819>.
63. Thompson, J.D., MacMillan, I.C. (2010). Business Models: Creating New Markets and Societal Wealth. *Long Range Planning*, Vol. 43, Iss. 2-3, pp. 291-307, doi: <https://doi.org/10.1016/j.lrp.2009.11.002>.
64. Weerawardena, J., Salunke, S., Haigh, N., Mort, G.S. (2021). Business model innovation in social purpose organizations: Conceptualizing dual social-economic value creation. *Journal of Business Research*, Vol. 125, pp. 762-771, doi: <https://doi.org/10.1016/j.jbusres.2019.10.016>.
65. Xiao, H., Yu, D. (2020). Achieving Sustainable Competitive Advantage through Intellectual Capital and Corporate Character: The Mediating Role of Innovation. *Problems of Sustainable Development*, Vol. 15, Iss. 1, pp. 33-45, DOI:10.35784/PE.2020.1.04.
66. Yang, M., Evans, S., Vladimirova, D., Rana, P. (2017). Value uncaptured perspective for sustainable business model innovation. *Journal of Cleaner Production*, Vol. 140, Part. 3, pp. 1794-1804, doi: <https://doi.org/10.1016/j.jclepro.2016.07.102>.
67. Yunus, M. (2007). *Creating a World without Poverty: Social Business and the Future of Capitalism*. New York: Public Affairs.
68. Zott, C., Amit, R. (2010). Business model design: an activity system perspective. *Long Range Plan*, Vol. 43, Iss. 2-3, pp. 216-226, doi: <https://doi.org/10.1016/j.lrp.2009.07.004>.

REFORM TRENDS IN EUROPE'S HIGHER EDUCATION PROGRAMMES AS AN EXEMPLIFICATION OF THE BOLOGNA PROCESS AFTER THE ROME 2020 MINISTERIAL CONFERENCE

Marcin SKINDER^{1*}, Żaneta SKINDER²

¹ Politechnika Bydgoska; marcin.skinder@pbs.edu.pl, ORCID: 0000-0001-5876-8977

² Collegium Medicum UMK; z.skinder@cm.umk.pl, ORCID: 0000-0001-6168-2189

* Correspondence author

Purpose: The subject of the study is issues related to the reform of higher education systems taking into account the Bologna Process. As a theoretical and cognitive goal, the author adopted the presentation of the categories and conditions of the Bologna Process in its roman stage (2020).

Design/methodology/approach: The article adopts methodological elements specific to the field of social sciences, including the monographic method. It is implemented in this work as a way of researching specific, individual cases and focuses on the overall recognition of one relevant problem. It is important here to verify each element of the phenomenon in question and focus on the individual components of the issue addressed based on qualitative-descriptive elements. The paper draws on the printed publications of authors such as Irina Ferencz, Agnieszka Olechnicka, Tim Birtwistle, Robert Wagenaar, Jurgen Enders, Jeroen Huisman and continuous prints, including: *Edukacja Ekonomistów i Menedżerów*, *Forum Akademickie*, *Education*, *Zeszyty Naukowe Politechniki Śląskiej*, *Studia Prawno-Ekonomiczne*, *Białostockie Studia Prawnicze* and *Studia Prawnoustrojowe*.

Findings: The research problem was framed by the question: what changes are possible to implement in European higher education, under the Bologna harmonization formula, after the announcement of the Rome Communiqué in 2020?

Practical implications: The practical objective was defined in the form of comments relevant to the needs for changes in the course of the Bologna Process with regard to multidegree education, quality assurance and recognition of periods of education, the social dimension of the Bologna Process and the internationalization of higher education.

Originality/value: The study consists of three rudimentary parts, including a characterisation of the development of higher education and the implications for the region, and an analysis of the Bologna Process and its benefits for European higher education, as well as its most recent implications for higher education systems after the Rome 2020 conference. This characterisation fits into the thematic area of education management understood as a potential of the European region. This article addresses the issue of higher education development as a factor in regional development and aims to analyse the most up-to-date desiderata for harmonising higher education systems in Europe, particularly those raised at the Rome 2020 Ministerial Conference.

Keywords: Higher (tertiary) education, Bologna Process, harmonisation.

Category of the paper: Conceptual paper.

1. Introduction: the development of tertiary education and implications for the region

Tertiary education is often discussed in various public debates, the issue of its quality level, the objectives pursued, as well as the various matters of the educational entities related to academic activities. Particularly important seem to be those forming relations with regional economic entities, which may constitute development opportunities for citizens forming social capital in this arrangement.

Fundamental to this arrangement may be the educational projects which, through various deidentifications, serve to reform higher education, universities and the entire academic environment. The formula for some of these (in terms of harmonising the higher education system) has been exhausted, this applies to the Lisbon strategy and the Copenhagen process. Still active in terms of reforming this educational environment is the Bologna Process. The discourse in the social debate on the role of higher education institutions in socio-economic development processes, mentioned in the introduction, is based on the thesis that academic actors have the task of initiating reforms at the local level, but that they should also become involved in the global dimension. This broader dimension takes into account the contribution to sustainable development of regional communities, as well as entire countries, through the offer of education, modification of the organisation of higher education institutions, which, in the long term, may result in increasing levels of such indicators as enrolment or employability of graduates. Thus, the fundamental role of higher education institutions should be to contribute to the development of the region, which may be realised through teaching, scientific and research activities. In the first perspective, relevant study programmes are important, which can be adapted to the needs of the region, taking into account, for example, the proposals of external stakeholders, i.e. people, communities, institutions, organisations, offices, which, on the basis of the feedback principle, can influence schools, most often these are institutions constituting the academic environment, entering into relations with it.

Scientific activity and the application of its results in theory and practice should be the main objectives of academic schools. Through the high quality of scientific activity and the fostering of cooperation and knowledge exchange between scientists, institutions and the business community, there is a process of engagement in the socio-economic life of the region. This quality is understood as the output of Polish businesses in terms of publication activities. Jointly authored scientific articles and books reflect a certain type of cooperation between the business and scientific sectors. Both those publications co-authored by representatives of

science and business and those written independently, without the participation of academics, involve some kind of cooperation, including direct contacts, simultaneous employment of the co-author in the scientific sector or completed research projects carried out jointly with research and development institutions (Olechnicka, 2012).

In terms of research activity, on the other hand, it is significant to argue that schools are no longer isolating themselves, they do not maintain elite production by force. Rather, they function as centres of social development, catalysts for social, economic and political change. In addition to their teaching and research functions, referred to in the literature as the first and second missions, contemporary higher education institutions perform another task important for the well-being of societies, namely the development of relations with the socio-economic environment. This task is defined as the third mission of HEIs, understood narrowly and in which case the definitions emphasise cooperation with business and entities operating solely for the purpose of profit maximisation. One can also point to the ministerially-driven broader cooperation of HEIs with different types of entities operating in the economic sphere (non-governmental organisations) and administrative entities (local government, educational and medical institutions). It is also impossible to overlook the benefits for the cooperating entities, which gain reliable knowledge on their activities and substantive support to be used in current or investment activities (Kola, 2017; Kauf, Stec, 2017, p. 94).

The development of regions and their economic players requires access to modern technology and laboratories. In this connection, the activities of universities, where science and business can come together and which can drive various innovation processes, are indeed gaining in importance. It should be a priority for European countries to support those who engage in such cooperation between science and industry, including the commercialisation of research results. The transfer of knowledge to industry and the resulting feedback loop in the form of commercialisation can bring many benefits to society. This is mainly about linking science to production, commerce, finance and health care. The academic nature of science developing within the walls of universities should be replaced by pragmatic activities responding to the real needs of the market and the economy (Kuna-Marszałek, Lisowska, 2013, p. 31).

2. Characteristics of the Bologna Process

The exemplification of Europe as a region or set of regions, understood as units of territorial organisation in states, irrespective of their legal form, with a relatively large area and a significant population, economically and socially homogeneous, in which an appropriate economic and social policy is pursued, is at the same time an area of influence for various educational and social processes. These can include, those with less impact or which have

historically been exhausted, including the development plan known as the Lisbon Strategy (2000) and the Copenhagen Process (2002). In the area of the European region, the Bologna Process has been successfully operating, the de-siderations of which, known since 1999, have, in this view, rarely been analysed (Skinder, 2006).

The Bologna Process is a socio-educational project and exemplifies the harmonisation of the higher education system. Its practical dimension was initiated by the Bologna Declaration of 19 June 1999, whose main objective was to achieve the *European Higher Education Area (EHEA)*, which took place in 2010. The fundamental decisions of the document, including the use of the ECTS system, multidegree study and quality assurance of education, reformed the higher education systems of most countries in the European region. The results of the activities of the participants in the Bologna Process are announced in the framework of periodically organised conferences and communiqués of higher education ministers in important European cities for harmonisation (Bologna, Berlin, Paris, London, Leuven, Bergen, Bucharest, Vienna, Rome and Yerevan). The activity of the Member states, understood as the activities of the *Bologna Follow Up Group* (now the *Bologna Implementation and Coordination Group*) and the Member states (currently 48) in the Bologna Process from 1999 to 2023 included the following provisions, which were successively implemented in national academic systems in the form of desiderations. These include enhancing the employability of graduates, supporting mobility processes, improving the inclusive nature of higher education systems in the context of demographic challenges, offering a diploma supplement, distance learning (*lifelong learning*) (Huisman et al., 2012; Enders, 2011; Chmielecka, 2019; Bologna Process, 1999; Birtwistle, Wagenaar, 2020; Wagenaar, 2019, pp. 15-53; Skinder, 2021).

3. Implications of the Bologna process for European higher education systems after the Rome 2020 conference

The benefits of implementing the bologna decisions are also accentuated in other areas of activity. In 2020, a ministerial conference was held in Rome, where ministers announced the most recent developments in the Bologna process. It confirmed the strengthening of the social dimension in higher education, understood as the enhancement of the competences of academic staff and the ethical use of artificial intelligence (AI). The knotty initiatives and processes currently facing the implementers of the harmonisation of European higher education concern the achievement of the new 2025 shape, in which it may be important to build a cooperation network of European universities aimed at more effective language teaching, as well as to ensure equal mobility opportunities, understood as the movement of teachers and students for educational purposes across Europe on an *Erasmus* basis (European Education..., 2020).

In Rome 2020 (the Rome stage of the process), further desiderations were identified which, in relation to the current needs of European higher education systems, have become most relevant for the course of effective harmonisation. This thesis is multidirectional and takes into account the needs of the majority of higher education institutions in the Bologna Process member states, the quantitative status of which can be analysed in the statistical reports produced by the *Eurydice* network (European Education..., 2020; Skinder, 2015, p. 165).

In harmonising European higher education after Rome (2020), it is proving most important to focus on five rudimentary lines of action, including **improving multidegree education (particularly doctoral studies), quality assurance and recognition of periods of study, the social dimension of the Bologna Process and the internationalisation of higher education**, which are also necessary to improve national higher education.

With regard to multidegrees, it is important to further develop degree structures for convergence (convergence) defined as a relative reduction of the educational distance between the Bologna Process Member States (EHEA). It has to be stressed that there are difficulties in implementing such a defined (convergent) degree structure across Europe, so it has not been possible to consolidate the degree model for any of the degrees (one encounters degree programmes with a load of 180 ECTS credits for the first degree and 120 for the subsequent degree giving a total of 300 credits, as well as 360 in eastern countries, which may be due to the higher workload of first degree programmes). A problem in the convergence (compatibility) process are study programmes that do not fit into the harmonisation principles, due to the specific requirements of regulated professions, as well as those that cannot be linked to the structure of the three degrees, although they can successfully respond to specific needs related to professional development and lifelong learning (European Education..., 2020, p. 60).

With regard to quality assurance, it is worth noting the three phases of the introduction of this desideration announced in ministerial communications from 1999 to 2007, then 2007 to 2012 and in communications after 2012. In the first stage, the shape of the quality assurance desiderate, including its procedures implemented by internal and external institutions, was only discussed. The second phase consolidated the findings and in the third phase the quality assurance framework was developed in conjunction with automatic recognition, the link to the EHEA Qualifications Framework and the concept of joint programmes. The achievement of the EHEA in 2010 confirmed that most member states have their own internal and external quality assurance systems, and there has been a shift towards internationalisation of, hitherto, national, external quality assurance systems, which has started to generate disputes in some member states. This refers to the *European Quality Assurance Register (EQAR)* already implemented in the EHEA as a mechanism for ensuring compliance with the ESG (*European Standards and Guidelines*), which were published with the Bergen Ministerial Communiqué in 2005 and an updated form was adopted at the 2015 Ministerial Conference in Yerevan (European Education..., 2020, p. 89; Chmielecka, 2015, p. 29; Skinder, 2015, p. 159).

With regard to recognition, it can be said that the implementers of the Bologna Process have, with varying degrees of success, focused on simplifying the recognition procedures, taking into account the provisions made in the Lisbon Recognition Convention (LRC). It must be underlined that these attempts have not always had the desired effect and there are still obstacles to overcome, which mainly relate to problems of mutual comparability of learning outcomes (European Education..., 2020, p. 89).

With regard to the social dimension of the Bologna Process, it can be said that its main principles were formulated long ago, as in the London Communiqué (London Communiqué, 2007; Skinder, 2021, p. 535). It was about the empowerment of students, whose population in Europe should reflect the diversity pertaining to underrepresented and vulnerable groups, which failed. Among the member states, only a small number of countries have implemented a coherent system that takes into account the social dimension and its objectives, which illustrates insufficient progress and is linked to the subjectivity of interpretation with regard to relevant aspects of diversity. *The Eurostudent* project, which provides a database on the diverse living conditions of students, was to become a solution to this problem. Still, the fundamental goal of widening participation in higher education (especially for migrants) is still insufficient, both from a quantitative and qualitative point of view. Under-representation rates apply to women in some fields of study, although there are quite a number of them studying overall. There are too few older people studying, and there are barriers to the education of students, in this group of countries where the labour market situation has not completely improved after the economic crisis (European Education..., 2020, pp. 121-122).

With regard to internationalisation, it must be underlined that, although it was not immediately included in the stand-alone harmonisation deidentifications from the outset, it quickly dominated the work of the preparatory group (*Bologna Follow Up Group*, BFUG). Perhaps the process was associated with internationalisation and no need was seen to specifically isolate it (at least at the initial stage). This can be measured by student participation in mobility (*Erasmus*), which has increased in the last twenty years, although there is an unevenness, determined by the attractiveness of various areas. The target of reaching a rate of a fifth of students going abroad by 2020 was not achieved, not even approaching an average of 10%, which may mean that the assumptions made at the end of the first decade of the 2000s were overestimated or that weaker increases in overall student numbers were not taken into account. It is worth emphasising, however, that if only the second tertiary level of education were taken into account, the rates would be much higher. Internationalisation as understood in terms of mobility can gain momentum through recognition mechanisms, ECTS credits, the diploma supplement, and through multidegree mobility, whereby it is possible to move through degrees in higher education institutions all over Europe, and the assumptions of joint study programmes are also used in this process (European Education..., 2020, pp. 155-156; Wesołowska, 2013, p. 382; Communiqué Leuven and Louvain-la-Neuve, 2009; Ferencz, 2015, pp. 27-28; Gorylev, 2019).

4. Summary and conclusions

The continuation of the Bologna Process, following the announcement of the Communiqué of the Ministers of Higher Education of Rome (2020), needs to continue, and it seems necessary to update the current statements in the direction of forms that meet the harmonisation requirements of today. Still, among the catalogue of reforms needed, **the statements of multidegree education (especially as regards doctoral studies), quality assurance and recognition of periods of study, the social dimension of the Bologna Process and the internationalisation of higher education** must be included.

With regard to multidegree education, an important aspect is to ensure and optimise the transparency of the offer in the different countries. The attribution of ECTS credits and their positioning in national qualification frameworks should solve the underlying problems. As the analysis in the text shows, some countries are already using these tools and others are considering their introduction, which requires further cooperation and more widespread collaboration between countries. In terms of degree structure, there are still many systems that require external quality assurance agencies to monitor the implementation of standardised ECTS. All EHEA countries (except Russia and Belarus: on 11 April 2022, the membership of Belarus and Russia was suspended due to the Russian invasion of Ukraine, and on 6 June 2022 a decision was taken to remove these countries from the programme) have introduced the diploma supplement and met all ministerial obligations. In addition, national qualification frameworks in line with EHEA standards have been introduced virtually everywhere. The implementation of these key commitments gives hope for the continuation of well-chosen educational pathways based on knowledge, acquired knowledge, skills and competences that correspond to their personal goals and societal needs in specific Bologna member states.

With regard to quality assurance, it must be pointed out that the development of quality assurance systems in accordance with EHEA standards is crucial to guaranteeing high quality standards throughout Europe, which significantly strengthens confidence in higher education systems. Not all countries, however, are ready to allow the quality of higher education institutions to be evaluated by an entity based in a foreign country, albeit one belonging to EQAR, and only such an evaluation is considered fully objective and contributes to further strengthening trust, so this practice needs further improvement. Perhaps harmonisation efforts should focus on mechanisms to increase the level of trust in pro-quality institutions coming from abroad.

With regard to recognition, the actions confirmed at the Rome Ministerial Conference (previously in Yerevan and Paris) should be continued. Indeed, most of the countries in the EHEA have not fully implemented the Lisbon Convention, and this applies in particular to the situation of refugees and their situation as described in Chapter VII of the LRC (Convention on the Recognition of Qualifications, 1997). Although many countries claim to aim for automatic

recognition of other countries' diplomas, less than half of the higher education systems of EHEA member states actually implement this, and rarely which do so effectively and unconditionally for all students. Thus, most higher education systems need a continuation of reforms to allow students automatic access to higher education abroad.

With regard to the social dimension of the Bologna process, there is a lot of to do. Perhaps it is a question of the broad spectrum of activities and the considerable time span of the proceedings needed. Relevant here may be the application of the benchmarking formula, which always requires an outlay of time and work through a step-by-step action, first analysing and then implementing best practices to learn from each other. Certainly, the implementation of extensive research and the stimulation of cooperation between universities and the business sector to create new jobs and enrich the educational offer needs to continue. There is still not enough to eliminate financial and cultural barriers (especially in Western countries) and to ensure access to markets and schools for disadvantaged groups (social). There is also a need to strengthen the participation of the Bologna Process member states in the *Eurostudent* programme, whose participation is still far below the number of all Bologna countries, which significantly weakens the collection of data on the existence of European graduates.

With regard to the internationalisation, too, there is still much to be done, especially with regard to supporting disadvantaged students in such a way that mobility that promotes the process of social inclusion can be truly effective. It may be worthwhile to take advantage of the wide range of *e-learning*, including *blended learning* understood as a blended, or better, complementary process. The dissemination of new ICT technologies is triggering significant changes in the support of learning by electronic solutions, as has been demonstrated in foreign language education. *Blended learning* as a combination of traditional and electronic training can be relevant here for educational effectiveness.

References

1. Birtwistle, T., Wagenaar, R. (2020). Re-Thinking an Educational Model Suitable for 21st Century Needs (2020). In: A. Curaj, D. Ligia, P. Remus (eds.), *European Higher Education Area: Challenges for a New Decade* (pp. 465-482). Cham: Springer Nature. Retrieved from: DOI:10.1007/978-3-030-56316-5.
2. Bologna Process (1999). European Ministers for Higher Education, Joint declaration of the European Ministers of Education. Bologna 19 June 1999. Retrieved from: <http://www.ehea.info/cid100210/ministerial-conference-bologna-1999.html>, 10.03.2023.
3. Chmielecka, E. (2015). Europejskie Standardy i Wskazówki zapewniania jakości w szkolnictwie wyższym a polski model akredytacji. *Edukacja Ekonomistów i Menedżerów*, no. 2(36), pp. 29-40, <https://doi.org/10.5604/01.3001.0009.4589>, 10.03.2023.

4. Chmielecka, E. (2019). Proces boloński – to już 20 lat! *Forum Akademickie*, no. 9. Retrieved from: <https://prenumeruj.forumakademickie.pl/fa/2019/09/proces-bolonski-to-juz-20-lat>, 10.03.2023.
5. Communiqué of the Conference of European Ministers Responsible for Higher Education, *Leuven and Louvain-la-Neuve*, 28-29 April 2009. Retrieved from: https://ec.europa.eu/commission/presscorner/detail/en/IP_09_675, 10.03.2023.
6. Enders, J. et al. (2011). Chapter 27 The Bologna Process: from the national to the regional to the global, and back In: R. King, S. Marginson, R. Naidoo (eds.), *Handbook on Globalization and Higher Education* (pp. 469-484). Cheltenham/Northampton, MA: Edward Elgar, Retrieved from: https://www.researchgate.net/publication/259100905_The_Bologna_Process_From_the_National_to_the_Regional_to_the_Global_and_Back, 10.03.2023.
7. European Education and Culture Executive Agency, Eurydice (2020). *The European higher education area in 2020: Bologna Process implementation report*. Luxemburg: Publications Office. Retrieved from: <https://data.europa.eu/doi/10.2797/756192>, 10.03.2023.
8. Ferencz, I. (2015). Balanced Mobility Across the Board—A Sensible Objective? In: A. Curaj, L. Matei, R. Pricopie, J. Salmi, P. Scott (eds.), *The European Higher Education Area* (pp. 27-41). Cham: Springer. Retrieved from: https://doi.org/10.1007/978-3-319-20877-0_3, 10.03.2023.
9. Gorylev, A et al. (2019). Joint programs as a tool of building european higher education area. *Education*, no. 38(25). Retrieved from: www.revistaespacios.com/a17v38n25/a17v38n25p13.pdf, 10.03.2023.
10. Grupa wysokiego szczebla do spraw modernizacji szkolnictwa wyższego (2015).. *Nowe sposoby uczenia się i nauczania w szkolnictwie wyższym*. Sprawozdanie dla Komisji Europejskiej. Warszawa. Retrieved from: <https://issuu.com/FRSE/docs/modernizacja-2015>, 10.03.2023.
11. Huisman, J. et al. (2012). Europe's Bologna Process and its impact on global higher education. In: D.K. Deardorff, H. de Wit, J.D. Heyl, T. Adams (eds.), *The SAGE Handbook of International Higher Education* (pp. 81-100). Thousand Oaks: Sage Publications. DOI:10.4135/9781452218397.n5.
12. Kauf, S., Stec, P. (2017). Szkolnictwo wyższe jako czynnik zrównoważonego rozwoju regionów. *Zeszyty Naukowe Politechniki Śląskiej Seria: Organizacja i Zarządzanie*, z. 106, pp. 94-102, https://www.researchgate.net/publication/323749585_SZKOLNICTWO_WYZSZE_JAKO_CZYNNIK_ZROWNOWAZONEGO_ROZWOJU_REGIONOW, 10.03.2023.
13. Kola, A. (2017). *Współpraca uczelni z otoczeniem społecznym w świetle Ustawy 2.0*. Retrieved from: <http://obywatelenauki.pl>, 10.03.2023.

14. Konwencja o uznaniu kwalifikacji związanych z uzyskaniem wyższego wykształcenia w Regionie Europejskim, sporządzona w Lizbonie dnia 11 kwietnia 1997 r. Dz.U. 2004, nr 233, poz. 2339.
15. Kuna-Marszałek, A., Lisowska, R. (2013), Działalność badawczo-rozwojowa jednostek naukowych i badawczo-rozwojowych w regionie łódzkim. *Studia Prawno-Ekonomiczne, t. LC*, pp. 29-46. Retrieved from: <https://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-78553c07-b2b7-41fa-b9fd-a4585a64665c>, 10.03.2023.
16. London Communiqué 17–18 May 2007, 18–19 May 2001, Bologna Declaration 18–19 June 1999. Retrieved from: <https://ehea.info/page-ministerial-declarations-and-communications>, 10.03.2023.
17. Olechnicka, A. (2012). *Potencjał nauki a innowacyjność regionów*. Warszawa.
18. Skinder, M. (2006). Implementacja założeń Procesu Bolońskiego w wybranych uczelniach województwa kujawsko-pomorskiego In: W. Szymborski (eds.), *Stosunki międzynarodowe. Wybrane problemy*. Bydgoszcz.
19. Skinder, M. (2015). *Harmonizowanie narodowych systemów szkolnictwa wyższego państw europejskich lata 1990-2011*. Bydgoszcz.
20. Skinder, M. (2021). Implementacja postanowień procesu bolońskiego w ustawach o szkolnictwie wyższym Polski, Łotwy, Francji, Rumunii, Grecji, Czech i Finlandii. *Studia Prawnoustrojowe, nr 54*, pp. 529-549, DOI: 10.31648/sp.7138.
21. Skinder, M. (2021). Proces Boloński a Prawo o szkolnictwie wyższym i nauce. *Białostockie Studia Prawnicze, nr 4(25)*, pp. 159-170. DOI: 10.15290/bsp.2020.25.04.11.
22. Wagenaar, R. (2019). *REFORM! TUNING the Modernisation Process of Higher Education in Europe. A Blueprint for Student-Centred Learning*. International Tuning Academy. Retrieved from: https://www.researchgate.net/publication/331959106_Reform_TUNING_the_Modernisation_Process_of_Higher_Education_in_Europe_A_Blueprint_for_Student-Centred_Learning, 10.03.2023.
23. Wesołowska, A. (2017). Proces Boloński i powstanie Europejskiego Obszaru Szkolnictwa Wyższego. *Rocznik Integracji Europejskiej, 7*, pp. 379-388. <https://doi.org/10.14746/rie.2013.7.25>.

EVOLUTION OR STATUS QUO - REGIONAL OPERATIONAL PROGRAMMES IN THE EU FINANCIAL PERSPECTIVE 2014-2020

Waldemar SŁUGOCKI

University of Zielona Góra, Institute of Economics and Finance; w.slugocki@wez.uz.zgora.pl,
ORCID: 0000-0002-2076-699X

Purpose: The publication presents the evolution of the European Union policy implemented in Poland, focusing primarily on the 2014-2020 perspective, which was characterized by its decentralization.

Design/methodology/approach: The method of statistical data analysis and source materials was used in the work.

Findings: As a result of the conducted research, it was indicated that the 2014-2020 perspective was characterized not only by the highest allocation of financial resources, but the solutions proposed therein led to a deeper decentralization of regional policy in Poland consisting in the construction of two-fund regional programs (ERDF and ESF), prepared, managed and implemented at the regional level, bringing the thereby increasing the effectiveness of this policy.

Originality/value: The literature research and statistical analysis carried out in the article served to show the evolution of the regional policy decentralization process on maximizing its effects. The research results are dedicated to a wide group of people and entities benefiting from the support of European Union funds.

Keywords: cohesion policy, region, operational programs, regional development, European funds.

1. Introduction

The issues of broadly understood regional development have become increasingly important in Poland. In the first instance, in the context of finding extensive legitimacy in the Constitution, the Act on provincial local government, as well as the signed and ratified European Charter of Local Self-Government, primarily through the process of the country's integration with the European Union and, in this context, its participation in the EU's cohesion policy. In the second place, the importance grew with the implementation of the successive multiannual financial frameworks of the European cohesion policy and the growing awareness

of the importance of development policy, more broadly, the construction and implementation of a development management system, as well as the discounting of previous experience, which was also associated with the evolution of legal provisions in the field in question. It should be mentioned, *inter alia*, the Act on the Principles of Development Policy, the Act on the Principles of Implementation of Tasks Financed from European Funds. At the same time, it should be noted that the notions of the region and regionalism, based on a solid theoretical foundation of certain paradigms, rules and trends of development, the evolution of the territorial unit, give the regional policy a strong bearing as a conscious way of creating development and solving many important problems of development not only of the region, but also of the national economy (Hunek, 2000).

The reform of the country's territorial organisation by introducing district and voivodeship self-government, thereby restoring the three-tier territorial division of the country, started a broad process of economic and administrative change. The voivodeship became an essential participant in shaping the spatial socio-economic order and was given the opportunity to formulate the country's development strategy (Act of 5 June 1998 on Voivodeship Self-Government, 1998). The region has become, on the one hand, a "framework" for the programming and implementation of certain spheres of action, while on the other hand, it defines the ways to solve problems, to realise the development path of the region. The current regional policy is integrally linked to the decentralisation of the centre and the transfer of competences, resources and responsibilities to the regional level, although since 2015, after Law and Justice Party took power, we can observe recentralisation tendencies.

With this fact in mind, it should be recalled that the strategic bearing of the region as a distinct territorial unit and regionalism as a form of goal realisation was intended to enable:

- a constructive response to the state centralism and omnipotence of the state,
- the maintenance of the region's identity in the face of economic globalisation and cultural standardization,
- to create conditions for the development of self-government, self-governance and the concretisation and institutionalisation of democracy,
- the creation of a special development medium, the regional development multiplier (Sługocki, 2004).

The implementation of the European Union's cohesion policy in Poland in the subsequent perspectives was possible thanks to the aforementioned political changes, introducing the region as a *de facto* subject of its implementation in the territorial dimension. At the same time, it should be emphasised that the architecture of operational programmes, the distribution of financial resources and competencies in this area has been evolving. The first perspective 2004-2006 was characterised by a relatively low amount of EUR 12.8 billion and a low degree of decentralisation of competences, including in particular the implementation of a single operational programme implemented in 16 Polish regions. The Integrated Regional Development Operational Programme was characterised by the fact that the structure of

priorities and measures was unified and did not take into account the specificity of individual regions (National Development Plan 2004-2006, 2003). The management also took place at central level, while the regions participated in the implementation of the programme. The next programming period of 2007-2013 was characterised both by a higher value of EUR 63.7 billion and the transfer of further competences to the regions, which, on the basis of regional development strategies, prepared sixteen regional operational programmes in which the structure of priorities and measures corresponded, on the one hand, to the objectives of strategic and planning documents at European and national level, and, on the other hand, most importantly, to the potentials and challenges of individual regions (National Strategic Reference Framework 2007-2013, 2007). At the same time, the level of management was also transferred to the voivodeship government. It should be noted that these programmes were single-funded, financed by the European Regional Development Fund, while the remaining so-called national programmes were managed with the involvement of central institutions. In this context, the author's aim in this article is to present the process of implementation of the European Union's cohesion policy implemented at the regional level in Poland in the years 2014-2020, juxtaposing it at the same time with the experiences to date, focusing his attention both on the issues of the value of the financial resources allocated to the implementation of individual national and regional programmes, the criteria for the distribution of these resources, the substantive and thematic scope of the programmes prepared and the competences of the institutions involved in their implementation. The final conclusions indicate the differences and the evolution of the process of supporting the development of regions within the framework of the European cohesion policy. In order to achieve this research objective, it was necessary to answer the question: has the process of regional policy decentralisation in Poland progressed and to what extent?

Such a research question determined the substantive scope and structure of the article, in which the considerations begin with the issues related to the delineation of cohesion policy implemented in 2014-2020 at the national level in Poland, with a particular focus on the architecture of operational programmes along with the characteristics of national programmes. The next part addresses the process of increasing decentralisation and a description of the algorithm for the distribution of funds and the global characteristics of regional operational programmes. The whole article is closed with the final considerations contained in the conclusion.

2. Cohesion policy implemented in Poland in the period of 2014-2020

In accordance with the provisions of the Partnership Agreement (2014), a document defining the strategy for the intervention of European funds under the three policies of the

European Union, namely cohesion policy, the Common Agricultural Policy (CAP) and the Common Fisheries Policy (CFP) in Poland in the years 2014-2020. The Partnership Agreement was implemented through National Operational Programmes (NOPs) and Regional Operational Programmes (ROPs). These programmes together with the Partnership Agreement form a coherent system of documents of strategic and programming nature. The Partnership Agreement sets out both the strategic context in thematic and territorial terms, as well as indicating the expected results and the applicable financial and implementation framework. At the same time, it provides a reference point for defining the detailed content of Operational Programmes, which specify specific areas of support and implementation instruments (Partnership Agreement, 2014). It should be added that the Partnership Agreement and operational programmes negotiated with the European Commission formed the basis for the implementation of the described financial perspective. In this context, the European funds 2014-2020 were treated in the country as the main, although not the only, source of financing for investments ensuring dynamic, sustainable and balanced development. The idea behind the programming is to link European expectations to focus on the objectives of the "Strategy for smart, sustainable and inclusive growth - Europe 2020" (2010) with the national objectives identified and enshrined in the "National Development Strategy 2020 - Active Society, Competitive Economy, Efficient State" (2012). The European Funds pursued, albeit to different degrees and extents, all three objectives, contributing to increased competitiveness, social and territorial cohesion and improved administrative efficiency. It should be noted, therefore, that the objectives of the Partnership Agreement are identical to those of the SRK 2020, while maintaining synergy with the Europe 2020 Strategy. The document emphasises the need to tailor interventions to the potentials and needs of specific territories, as the document includes the "National Strategy for Regional Development 2010-2020: Regions-Cities-Rural Areas" the areas of strategic state intervention where integrated investments will be made within the framework of relevant policies and funds. The territorial dimension is emphasised in both national and regional operational programmes (National Strategy for Regional Development 2010-2020, 2010). The Partnership Agreement also assumes an increase in funds for the implementation of regional operational programmes, which means greater responsibility than so far for the implementation of the objectives set out in the document (Programming of the financial perspective 2014-2020. Partnership Agreement, 2015).

In the years 2014-2020, the amount of EUR 82.5 billion was allocated to Poland as part of the cohesion policy, which was by EUR 18.8 billion higher than the funds allocated for the implementation of the 2007-2013 perspective. In this perspective, the money will be invested in the areas that will contribute most to Poland's development, among which are: increasing the competitiveness of the economy, improving the social and territorial cohesion of the country and increasing the efficiency and effectiveness of the state. The largest funds will be allocated to the implementation of investments in the field of transport infrastructure such as roads and railways, while the largest increase in expenditure was for investments in the field of innovation

and support for economic entities. There are also repayable financial instruments - loans, loan sureties, which also support the projects implemented by small and medium-sized enterprises. Money will continue to be invested in the environmental protection and the energy sector, as well as in cultural, employment, education and social exclusion projects. Six national programmes will be implemented under the agreement, including a cross-regional "Operational Programme for Eastern Poland" (see Figure 1), as well as sixteen regional operational programmes (Błasiak-Nowak and Rajczewska, 2015).

The architecture of the national operational programmes is formed by the Operational Programme "Infrastructure and Environment", the objective of which was to support a resource-efficient and environmentally friendly economy, as well as one that favours territorial and social cohesion. This objective stems from one of the three priorities of the "Europe 2020 Strategy", which is sustainable growth understood as fostering a more resource efficient, greener and more competitive economy, in which environmental objectives are complemented by actions for economic, social and territorial cohesion. This priority is based on a balance and complementarity of actions in three areas: clean and efficient energy, climate change adaptation and resource efficiency, competitiveness, including making a significant contribution to the EU's continued global leadership in environmentally friendly technologies. An amount of EUR 27.41 billion has been allocated to the operational programme (Operational Programme Infrastructure and Environment 2014-2020, 2014).

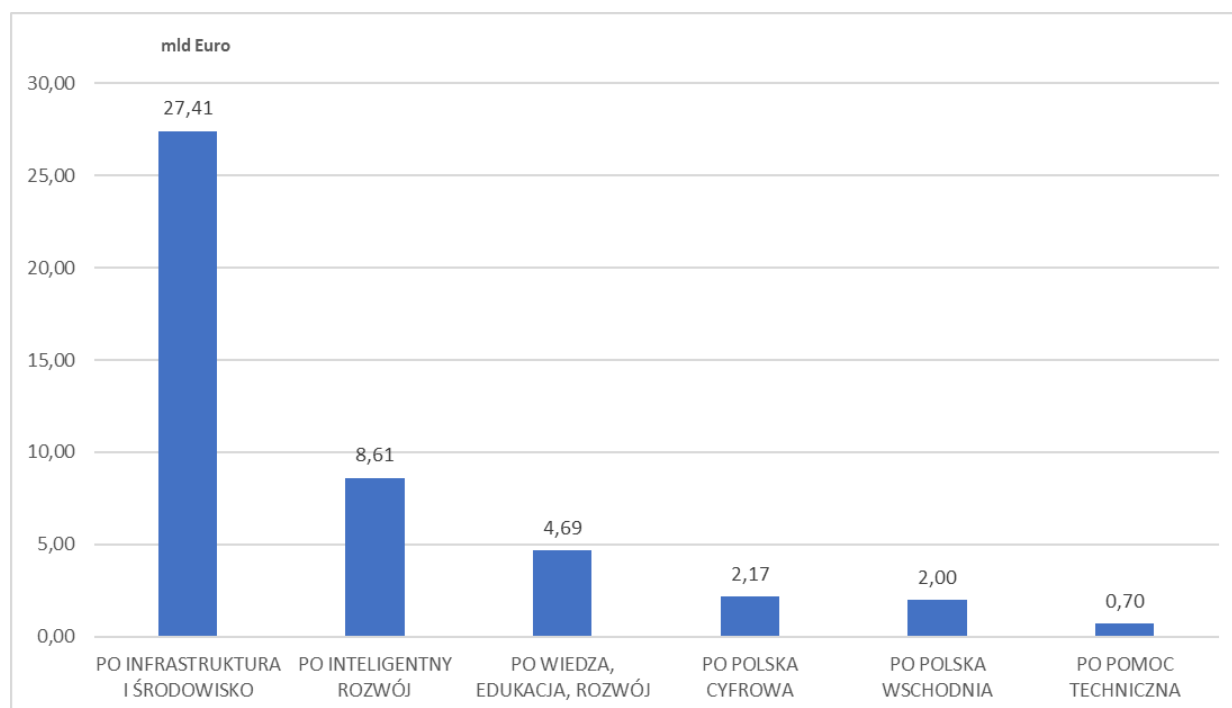


Figure 1. Allocation of national operational programmes in 2014-2020.

Source: own elaboration based on: Błasiak-Nowak and Rajczewska, 2015.

Another of the programmes was the "Intelligent Development" Operational Programme. The investments undertaken under the programme served to stimulate innovation and competitiveness of the Polish economy. The activities undertaken under the IDOP focused on supporting the entire process of innovation creation from the stage of an idea formation, through the stage of R&D works, including the preparation of a prototype, to the commercialisation of the results of R&D works. Taking into account the different level of risk of project realisation at different stages of implementation, it was foreseen to use grants and repayable instruments. It should be noted that the smart growth is also one of the three priorities outlined in the Europe 2020 strategy. It concerns an increase in R&D investment. In individual Member States it has been adapted to the implementation possibilities. In the case of Poland, it is associated with the allocation of 1.7% of GDP to this area in 2020. The funds allocated for the implementation of the programme amounted to EUR 8.61 billion (Intelligent Development Operational Programme 2014-2020, 2014).

The third most valuable national programme implemented in 2014-2020 was the Operational Programme "Knowledge Education Development" its value amounted to EUR 4.69 billion. The programme responds to challenges and at the same time is an instrument for the implementation of the Europe 2020 Strategy, just like the previously presented programmes. The programme is aimed at supporting the quality, efficiency and openness of higher education as a knowledge-based economy. It takes into account the long-term challenges facing the European Union related to globalisation, economic development, the quality of public policies, demographic phenomena or investment in human capital (Operational Programme Knowledge Education Development Education Development 2014-2020, 2014).

The objective of the Operational Programme "Digital Poland" is to strengthen the digital foundations for the development of the country, with broad access to fast Internet, efficient and user-friendly public e-services and the constantly increasing level of digital competence of the society as the foundations. In addition, the programme is in line with the first objective of the Europe 2020 Strategy, i.e. smart growth - based on knowledge and innovation. Innovation in this respect, as highlighted in the programme, also translates into cost-saving solutions, reducing energy, fuel and paper consumption. Furthermore, the Internet increases the reach of the services provided, reduces their costs and improves their transparency. It makes them de facto more accessible both in the sense of being able to use the service remotely and in the sense of adapting the way the service is provided to the perceptive capacity of the recipient. The digitalisation creates particular opportunities for improving the quality of life of people with disabilities and those at risk of social exclusion. The programme was worth EUR 2.17 billion (Digital Poland Operational Programme 2014-2020, 2014).

Due to the fact that voivodships of Eastern Poland are among the least developed in terms of GDP per capita in the EU-27 and the least competitive regions in the European Union. Taking this into account, the main objective of intervention under the programme was assumed as growth of competitiveness and innovativeness of the macroregion of Eastern Poland.

The document indicates that it will be achieved by focusing the measures on supporting: SMEs in terms of innovative activities; creating conditions favourable for the emergence of innovativeness of SMEs in Eastern Poland; creating new business models for the internationalisation of SME activities; improving the efficiency of transport systems and sustainable transport of voivodeship cities and their functional areas; increasing the accessibility of the macro-region in terms of transport infrastructure. EUR 2.0 billion has been earmarked for the implementation of the programme (Operational Programme Eastern Poland 2014-2020, 2014).

The last of the national programmes implemented in the 2014-2020 perspective was the Operational Programme "Technical Assistance". It is a tool for strengthening the administration and supporting the implementation of cohesion policy. The main tasks of the programme were to: maintain and develop the potential of institutions implementing the cohesion policy in Poland in the years 2014-2020; prepare beneficiaries for the implementation of projects; support the urban dimension in the cohesion policy; provide an information and promotion system for European funds. The implementation of the programme took place with the support of EUR 0.7 billion (Technical Assistance Operational Programme 2014-2020, 2014).

The 2014-2020 perspective also saw the implementation of European Territorial Cooperation (ETC) programmes with a total value of EUR 0.7 billion, which differ from regional and national programmes in their international character and the need for Polish beneficiaries to cooperate with foreign partners. As part of the ETC, projects in the field of cultural heritage and the environment, the development of infrastructure, entrepreneurship and education can be implemented. In addition, this perspective saw the inauguration of the Connecting Europe Fund, a financial instrument that supports the development of three areas - transport, energy and telecommunications networks. The European Union has a separate financial envelope in its budget for this purpose (<https://www.gov.pl/web/fundusze-regiony/dowiedz-sie-wiecej-o-funduszach-europejskich>, 24.01.2023).

3. Regional Operational Programmes - deeper decentralisation

The deeper decentralisation of the cohesion policy was one of the key changes in the previous system of managing European funds. Local governments had almost 40% of the total pool of funds allocated to Poland in the years 2014-2020. Compared to the previous perspective, there was a definite increase, as in the previous seven-year period it was at the level of 25% of the then allocation. In the absolute amounts, a total of more than EUR 31 billion was allocated to support the regional operational programmes (Table 1).

Table 1.
Regional Operational Programmes in 2014-2020

VOIVODSHIP	Total funds granted from European funds for the regional programmes (in EUR)
DOLNOŚLĄSKIE	2 252 546 589
KUJAWSKO-POMORSKIE	1 903 540 287
LUBELSKIE	2 230 958 174
LUBUSKIE	906 929 693
ŁÓDZKIE	2 256 049 115
MAŁOPOLSKIE	2 878 215 972
OPOLSKIE	944 967 792
PODKARPACKIE	2 114 243 760
PODLASKIE	1 213 595 877
POMORSKIE	1 864 811 698
ŚLĄSKIE	3 476 937 134
ŚWIĘTOKRZYSKIE	1 364 543 593
WARMIŃSKO-MAZURSKIE	1 728 272 095
WIELKOPOLSKIE	2 450 206 417
ZACHODNIPOMORSKIE	1 601 239 216
TOTAL (15)	29 187 057 412
MAZOWIECKIE	2 089 840 138
TOTAL (16)	31 276 897 550

Source: European Funds in Poland, 2014.

Similarly to the 2007-2013 perspective, the regional operational programmes are co-financed by the European Regional Development Fund. For the implementation of these programmes, more than 55% of this fund was allocated to Poland during the period in question. An unprecedented solution is the regionalisation of the European Social Fund and the allocation to regional programmes of 70% of the money flowing into the country from this fund. In this way, the provincial governments took over a huge responsibility for supporting interventions in the field of counselling, training, education, vocational training, retraining of employees, equipping them with new competences, or support for entrepreneurship (European Funds in Poland, 2014).

This solution has resulted in regions implementing two-fund programmes supported by ERDF and ESF, which consequently gives regional governments the possibility of comprehensive financing of development goals. Undoubtedly, it also contributes to a closer link between infrastructural projects and the so-called soft projects, which translates into an increase in their effectiveness. This solution also affects the closer linkage and coordination of activities undertaken in the regions by institutions involved in the implementation of the programmes. Among the sixteen operational programmes, one of them, the Mazowieckie Voivodeship programme, is characterised by the fact that the Mazowieckie Voivodeship does not meet the criteria for Objective 1 of the Cohesion Policy, meaning that GDP per capita in this region is higher than 75% of the average GDP per capita. For this reason, new rules for the investment of European funds applied in Mazovia. In this unitary case, the regional programme will account for 60% of the allocation, with the remaining 40% of the allocation earmarked for the region located in national programmes (European Funds in Poland, 2014).

Table 2.

Regional Operational Programmes in 2014-2020 - percentage share of voivodships (PSV) in the allocation

VOIVODSHIP	Share in %
DOLNOŚLĄSKIE	7,72
KUJAWSKO-POMORSKIE	5,68
LUBELSKIE	7,30
LUBUSKIE	2,79
ŁÓDZKIE	5,69
MAŁOPOLSKIE	6,67
OPOLSKIE	2,71
PODKARPACKIE	7,04
PODLASKIE	3,99
POMORSKIE	5,84
ŚLĄSKIE	10,19
ŚWIĘTOKRZYSKIE	4,62
WARMIŃSKO-MAZURSKIE	6,49
WIELKOPOLSKIE	7,05
ZACHODNIPOMORSKIE	4,96
TOTAL (15)	88,74
MAZOWIECKIE	11,26
TOTAL (16)	100,00

Source: Gostomczyk, 2017.

The money allocated for the implementation of the regional operational programmes was divided by the Ministry of Regional Development in a close cooperation with the regions in accordance with the information presented in the conclusions of the European Council on 7 and 8 February 2013, which used as a basis for their calculation:

- determination of the population for each region,
- the determination of the GDP per capita in PPS (eng. Purchasing Power Standards) for each region,
- determining the so-called prosperity gap - the difference between GDP per capita in PPS for a given region and the average GDP per capita in PPS for the entire EU,
- determination of the absolute amount (in EUR) obtained by multiplying the population for the region concerned by the so-called prosperity gap, i.e. the difference between the GDP per capita in PPS for the region concerned and the average GDP per capita in PPS for the EU,
- multiplying the amounts obtained for each region in the previous point by the so-called weighting factor, the percentage of which varies and reflects the relative prosperity measured in purchasing power parities of the Member State in which the region is located relative to the EU average. In the case of regions whose level of GNI (gross national income) per capita is less than 82% of the EU average - all less developed regions in Poland - this factor is 3.15%,

- determination of the number of the unemployed in each region and the theoretical number of unemployed in each region calculated using the average unemployment rate of all less developed regions in the EU. Calculation of the difference between the actual and theoretical number of unemployed in each region. Adding to the amount obtained in the previous point the amount resulting from the allocation of a premium of EUR 1,300 per unemployed person per year for the number of unemployed people in each region exceeding the number who would be unemployed using the average unemployment rate of all less developed regions in the EU - based on Eurostat data (Maciejczak, 2013).

As a consequence of adopting the methodology described above, a theoretical amount of allocation for less developed regions was adopted - all Polish regions excluding Mazovia. It was used to determine the structure of the percentage distribution of funds for individual voivodeships, which is presented in detail in Table 2 above.

The further decentralisation means that the regions prepared their development goals autonomously on the basis of smart specialisations, i.e. areas with the greatest potential, the development of which may lead to more effective regional competition on the national and international markets. This idea envisages that the region, or country, will achieve the highest level of socio-economic growth based on previously diagnosed strengths, i.e. the specific potential inherent in a given area. Within this framework, each of the voivodeships identified their smart specialisations in cooperation with various actors in the game of development, including local entrepreneurs, scientists, experts in the economy or environmental protection. When analysing individual regional operational programmes, it should be noted that the most frequently defined smart specialisations include: information and communication technologies, bioeconomy, energy and traditional industry branches, such as machinery, metal and wood processing. In addition to smart specialisations, the programmes will focus on support for the development of entrepreneurship - mainly small and medium-sized enterprises. In this respect, the funds will support the increase in innovation and competitiveness of enterprises by financing research and development activities and links between business and science. Transport investments continue to be supported, above all the expansion of road and rail connections to provide smaller towns with links to national and European transport networks. This includes modernisation of railway lines, renovation of railway stations as well as the purchase of modern rolling stock. An important priority emerging from the regional programmes is the development of a low carbon emission economy, involving support for a wide variety of projects such as the energy modernisation of buildings, support for clean public transport, energy production from renewable sources (RES), modernisation of transmission networks, reduction of road traffic in city centres, construction of cycle paths.

4. Conclusions

The development of the regional policy in Poland progressed together with the process of European integration. In fact, the process of Poland's integration with the European Union determined the process of shaping the regional policy, which enables the implementation of the European cohesion policy on national grounds, for which Poland, with successive multiannual financial perspectives, received more funding. It should be noted that the reforms undertaken in the nineties of the last century: of the territorial organisation of the country, of public finances, of the institutional arrangement contributed to the construction of solutions fully enabling the creation and implementation of the regional policy in Poland, both in the interregional and intraregional dimensions (Sługocki, 2019). The regional dimension has progressed primarily in view of the solidification of voivodeship self-governments by successively transferring more and more management competences to them, as well as the decentralisation of financial resources flowing to Poland with the implementation of successive financial perspectives under which cohesion policy was implemented. In fact, the 2014-2020 perspective, which is the subject of this article, turned out to be a breakthrough, with full decentralisation, i.e. transfer of competencies both in the process of preparing regional operational programmes and their implementation. It should be noted that local governments were for the first time given the opportunity to build regional operational programmes which included intervention under both the European Regional Development Fund, which, incidentally, was implemented in a fully regionalised manner for the first time in the 2007-2013 perspective, and the European Social Fund, which was regionalised in the 2014-2020 perspective. The changes introduced at that time made it possible to prepare regional operational programmes, under which it was possible to make investments across the full spectrum of socio-economic life, thus enabling the real impact of EU funds by voivodeship governments to undertake such actions that minimise deficits and support the strengths of the regions. On the other hand, the possibility of autonomous preparation of regional operational programmes preceded, as pointed out in the text of the article, by the process of preparing a diagnosis and a development strategy for the region, allows for better adjustment of interventions, thus increasing the effectiveness of the impact of EU funds. After nineteen years of experience in Poland's implementation of regional policy supported by the Structural Funds and the Cohesion Fund, the European Union's cohesion policy has produced a number of concrete effects, not only in the process of shaping this policy, but above all its positive impact on reducing the development gap between Polish regions and the best-developing regions of the European Union Member States. It has also contributed to building up the institutional arrangement at different levels of regional policy implementation and to developing competent human teams that manage the development of Poland with success at central, regional and local level.

References

1. Błasiak-Nowak, B., Rajczewska, M. (2015). Polityka spójności Unii Europejskiej na lata 2014-2020. *Kontrola Państwowa*, nr 3.
2. *Europa 2020. Strategia na rzecz inteligentnego i zrównoważonego rozwoju sprzyjającego włączeniu Społecznemu*, KOM (2010).
3. *Europejska Karta Samorządu Terytorialnego*. Dz.U. 1994, nr 124, poz. 607.
4. *Fundusze Europejskie w Polsce* (2014), nr 36.
5. Gostomczyk, W. (2017). Kryteria podziału środków unijnych w ramach regionalnych programów operacyjnych. *Zeszyty Naukowe Wydziału Nauk Ekonomicznych*, nr 2(20).
6. Hunek, T. (2000). Dylematy polityki regionalnego rozwoju wsi i rolnictwa. *Polska Regionów*, nr 19.
7. *Konstytucja Rzeczypospolitej Polskiej z dnia 2 kwietnia 1997 r.* Dz.U. 1997, nr 78, poz. 483, z późn. zm.
8. *Krajowa Strategia Rozwoju Regionalnego 2010-2020* (2010). Warszawa.
9. Maciejczak, M. (2013). Jak alokowane są środki na regionalny program operacyjny dla Mazowsza w nowej perspektywie finansowej? *Biuletyn*, nr 2.
10. *Narodowe Strategiczne Ramy Odniesienia 2007-2013* (2007). Warszawa.
11. *Narodowy Plan Rozwoju 2004-2006* (2003). Warszawa.
12. *Program Operacyjny Infrastruktura i Środowisko na lata 2014-2020* (2014). Warszawa.
13. *Program Operacyjny Inteligentny Rozwój na lata 2014-2020* (2014). Warszawa.
14. *Program Operacyjny Polska Cyfrowa na lata 2014-2020* (2014). Warszawa.
15. *Program Operacyjny Polska Wschodnia 2014-2020* (2014). Warszawa.
16. *Program Operacyjny Pomoc Techniczna 2014-2020* (2014). Warszawa.
17. *Program Operacyjny Wiedza Edukacja Rozwój Edukacja Rozwój 2014-2020* (2014). Warszawa.
18. *Programowanie perspektywy finansowej 2014-2020. Umowa Partnerstwa* (2015). Warszawa.
19. Sługocki, W. (2004). *Lubuskie doświadczenia w wykorzystaniu funduszy Unii Europejskiej*. Zielona Góra.
20. Sługocki, W. (2019). The process of shaping regional policy in Poland. *Przegląd Politologiczny*, nr 2.
21. *Strategia Rozwoju Kraju 2020* (2012). Warszawa.
22. *Umowa Partnerstwa 2014-2020* (2014). Warszawa.
23. *Ustawa z dnia 5 czerwca 1998 r. o samorządzie województwa*. Dz.U. 1998, nr 91, poz. 576.

PREFERENCES OF CUSTOMERS IN ACCORDANCE WITH SENSITIVITY TO NARRATIVE CRITERION IN FILM AND LITERARY TOURISM

Agata STANDO^{1*}, Robert ROMANOWSKI², Olesia MAIEROVÁ³

¹ Poznan University of Economics and Business, SKNMarketing; standooo2537@icloud.com,
ORCID: 0009-0008-4069-1957

² Poznan University of Economics and Business, Institute of Marketing; robert.romanowski@ue.poznan.pl,
ORCID: 0000-0002-8585-6806

³ Czech University of Life Science, Faculty of Economics and Management; maierovao@pef.czu.cz,
ORCID: 0000-0005-9331-052X

* Correspondence author

Purpose: The aim of the paper is to assess the possibility of using narrative attributes applied in film and literary works for creating tourism products based on the attitudes and preferences of potential tourists with different levels of narrative.

Design/methodology/approach: In the research procedure, desk research was used to define the attitudes and preferences of potential tourists, which were examined in terms of sensitivity to narrative related to the place. Then, an online survey (CAWI) was conducted among 200 respondents who were asked a sequence of questions about attitudes towards narratives related to the setting of the plot appearing in literary works. On this basis, potential tourists were divided into 3 groups: people with a low, medium and high level of sensitivity to narrative related to the place. In addition, they were asked to indicate their propensity to visit places related to film and literary works, and finally to determine the importance of various factors (pull factors) influencing the perception of the narrative. In the study, it was assumed that the tourist development of a given town can be intensified if a given place can be associated by potential tourists with a story that is described in a novel, film or series appearing in pop culture.

Findings: The highest declarative inclination to visit a plot-related place is represented by people with a high level of sensitivity to narrative, which is in line with expectations. However, people with its low level more often decide to visit a described place. This may be due to their emotional insufficiency related to the narrative. Probably, when planning tourist trips, they want to become a "real" part of the plot. On the other hand, people with a high level of sensitivity are most emotionally attached to the narrative and, despite a higher declarative tendency towards visiting places related to the plot, they less often decide to actually travel. The lowest tendency to visit places related to the plot was declared by undecided people (with an average level of sensitivity to narrative) who, at the same time, constituted the largest group in the study. People responsible for film tourism should focus on this group. Places related to film and literary works in their home country are most often visited.

Research limitations/implications: It is worth empirically verifying the possibility of developing film and literary tourism products based on fictional places related to fantasy films and series, not only such well-known and developed products as "Game of Thrones" or "Harry

Potter”, but also other productions, because they are very popular and have a group of loyal fans. It is also worth using the criterion of sensitivity to narration as a moderator in future research.

Practical implications: The group of people with an average level of sensitivity to narrative is the most attractive group for the authorities of territorial units due to their size. There are 4 narrative features that are worth considering to attract this group to the place: the attractive plot of the film, the experience/skills of the actors, the actors selected for the role and the actor's portrayal of the character, i.e. acting skills. In the promotional policy, it seems necessary to use the presence of actors and recreate the most attractive scenes from the film's plot in the design of promotional campaigns and the film tourism product itself.

Originality/value: The article contains a list of attributes that can be used in a promotional campaign of a place related to a literary or film work. These attributes are perceived differently by various target groups divided according to the criterion of sensitivity to narration. The paper is addressed to the authorities of territorial units, both at national and local levels, and to people involved in the tourist development of a territorial unit.

Keywords: sensitivity to narration, films and literary tourism, tourist destination, preferences in film tourism, tourist typology.

Category of the paper: research paper.

1. Introduction

Representatives of tourist destinations are looking for new ways to increase the attractiveness of places. One of them is the use of literary and film works commonly known in pop culture. The influence of film and literary works on the attitudes of tourists related to visiting places included in these works has been recognized in literature on the subject (Ito, Nagar, 2019; Xiaohong, Ka Wai Lai, 2022; Hwang, Pham, 2022; Contu, Pau, 2022).

The publicity caused by films, film producers and actors themselves can be used in the creation of tourist products (Daszkiewicz, Wołosecka, 2019). Images and depicted destinations that have been created on the pages of books, novels or cinema screens significantly influence the choice of a destination among tourists (Ito, Nagar, 2019). Destination positioning, its appearance in audiovisual media or literary works, can be considered as product positioning (Romanowski, 2013; Ito, Nagar, 2019). An attractive tourist destination is an important element of tourism and success of a film. The higher the attractiveness of a destination, the more likely it is to change the attitude of tourists and their intentions towards visiting that destination. Additionally, an attractive tourist destination reflects the feelings, beliefs and opinions an individual has about a perceived destination. In literature on tourism, films are recognized as having major impact on the intention to visit a destination (Ito, Nagar, 2019). Factors such as travel incentives (advertising) and external variables (destination image) are mentioned. These links can play an important role in creating destination awareness, thus influencing the intentions of tourists to visit a given destination (Ito, Nagar, 2019).

In this study, an attempt was made to determine the pull factors affecting attractiveness of a narrative related to a given place. One of the first concepts of pull factors, being an element of the classification of travel motives, and then determinants of tourist motivation, was presented by Dann (1977). This classification refers to Maslow's theory of needs and distinguishes 2 groups of motivational factors understood as determinants, tourism motivators, namely: factors inducing tourist activity (push factors) and factors affecting the choice of destinations (pull factors). The author repeatedly emphasized that both categories of factors (push and pull ones) are the basis for making decisions about a tourist trip tangent. In turn, J.M. Crompton (1979) attempted to develop and operationalize this concept by pointing to 9 types of tourist motivation, where the author treated 7 of them as socio-psychological factors (push motives) and 2 as pull motives. The first group of factors are: escape from the surrounding world, experiences and self-evaluation, relaxation, prestige, return, strengthening family ties and establishing social interactions. The second group includes: novelty, innovation and learning. In the case of film tourism, it is assumed that the choice of a tourist destination is influenced by the place shown in the plot of the film or book, the performance of the work and the personality of the actors playing the main roles (Gjorgievski, Melles-Trpkova, 2012).

The aim of the paper is to assess the possibility of using narrative attributes used in film and literary works for the creation of tourism products based on the attitudes and preferences of potential tourists with different levels of sensitivity to narrative. This goal has been detailed in 4 research questions:

1. What is the typology of respondents in terms of attitudes towards the narrative related to the place?
2. What is the tendency of people from the group with different levels of sensitivity regarding the narrative to undertake activities within the framework of film and literary tourism?
3. Did the works make the respondents visit places related to the plot, and if so, which works were these (books, films/series)?
4. What is the significance of the various factors used in the narrative of the film (pull factors)?

2. Literature review

Literary tourism, along with cultural heritage, museum and event tourism, is a part of cultural tourism (von Rohrscheidt, 2016). According to the definition provided by R. Butler (2011), it is "tourism, the main motivation of which is reaching specific places related to literature in various ways and which may include visiting: former and present homes of writers and poets (living or dead), real and imaginary places described in literature and places referring

to literary characters and events”. According to K. Buczkowska (2009), literary cultural tourism is “a form of tourism, the main motivation of which is to reach specific places related to literature (fiction and non-fiction) in various ways, enabling broad contact with culture and implemented through:

- visiting and learning about real places related to literary works and their heroes, following in the footsteps of these heroes (both fictional and real),
- searching for non-existent places described in books and confronting literary myths with reality,
- visiting the homes of writers and poets, biographical museums, places of their work and temporary stays,
- reaching places referring to writers, poets, literary figures and events, such as: literary museums, monuments, commemorative plaques, tombstones, epitaphs, busts, literary centers,
- trips to participate in various literary events, such as: Book Days, Book Biennale, literary awards, book fairs, literary exhibitions, literary rallies, meetings with writers, poets and writer-travelers,
- visiting museums and workshops related to the process of book production (museums of papermaking, printing museums, bookbinding shops, printing houses).

The definition of film tourism is almost the same for literary tourism. A slight difference is related to traveling in the footsteps of actors or film directors, as well as their works. Along with the development of film tourism, the concept of "set-jetting" was also created, defining visiting places known from the screens (Urbańczyk, 2018). Its purpose is for the recipient to visit the place of action of their favorite or popular movies. In addition, discovering the climate and atmosphere of a given production, searching for specific objects from film frames or often experiencing adventures in which the heroes were participants (Stasiak, 2009).

The fact that there is a trend of traveling to a place that has been created or promoted through literary or film works is indisputable. The popularity and success of a given project depends on many factors – broadly understood promotion is one of them (Ciechomski, Romanowski, 2016). Storytelling, as a modern promotion tool, is also used while popularizing a literary or film work. It stimulates interest in the world presented via the narration, i.e. often already existing places, cities or their fictional counterparts that can wait for their realization (Olkusz, 2018). Transfictionality in literature is therefore not anything divergent. It is a concept presenting the relationship between literary works, related to sharing various narrative components, i.e. created, fictional characters, locations or entire universes. According to M.L. Ryan (2018), transfictionality is the migration of "fictional objects to different texts". However, if this situation occurs in the field of film works, the formulation will assume the form of a "transmedia narrative". Within this topic, the most rapidly growing type of transfiction is "fan fiction", which is a depiction created by a fan of, and featuring characters from, a particular TV series, film, etc. Creating content, stories using the world presented from an already existing work can

significantly affect the popularization of the described background of events, and therefore, fictional places that have the opportunity to gain unique interest.

Most film industry studies use secondary data to explain the relationship between film attributes (genre, actor capabilities, critic reviews, distribution strategy, etc.) and revenue. In their study, A. Gazley, G. Clark and A. Sinha (2011) collected primary data from 225 respondents in New Zealand to better understand factors influencing the consumer decision-making process on the choice of film. In the study, the factor analysis method was used to map different species in the attribute space, as well as to understand factors influencing selection. The results showed that film genre, films based on true events, critics' reviews, country of origin, pricing strategy as well as the popularity of actors and directors significantly influence the choice of a film by consumers. In terms of film genre, the results allow to indicate that consumers most often prefer comedies and dramas to thrillers, while horror films are the least preferred. Other film genres, such as science fiction, animation or action films, are not particularly favored (Gazley, Clark, Sinha, 2011).

In a study of book reading in Poland conducted by the National Library, with the use of the Computer-Assisted Personal Interview (CAPI) research method, a sample of 2,015 respondents, aged not less than 15 years, was examined. The results demonstrated an increase in the percentage of people who declared that they read books, but most importantly, the genre of fantasy for adult readers (fantasy, science fiction, etc.) was among the dominant one for the respondents' reading choices. In addition, fantasy for adults is read twice as often by men (primarily between the age of 25-39) than women (Chymkowski, Zasacka, 2020).

Consumer preferences in relation to the choice of a given movie or book are not one-dimensional. The functioning of a tool such as storytelling or digital storytelling allows to bring the recipient closer to the events told in the story. These events naturally have a background of events, so the presented world can be located in a specific, real place. Entities interested in this tool, in accordance with its purpose, use it to increase attractiveness of a particular place, to make it recognizable to tourism. However, not only specially created stories can achieve this goal. Books and movies of every genre have the ability to popularize the places within them. Regardless of whether a given place already exists or is only depicted in the work, it can be a product that will interest potential tourists. This fact creates a lot of possibilities for making those places real, even if they exist only in novels or movies. These places become real when they are built, but in the opinion of fans and tourists, they come to life when they are visited. Earlier ideas, hopes and emotions of potential tourists, which arose while reading a novel or watching a movie, have the opportunity to experience the discovery of a real place, which at that time, existed only in the imagination of book or film consumers.

The potential of stories to create places, which has been recognized by proponents of the distinction between space and place, may depend on many different characteristics (van Es, Reijnders, Bolderman, Waysdorf, 2021). The first of them are stories about personal memories, which are determined by the coordinates of a given place. Secondly, certain places are

distinguished in culture because they are important in the context of history. Moving from fact to fiction, certain points in space can be transformed into places through traditional stories.

The whole idea of literary tourism is based on a paradox. On the one hand, tourists are guided by the desire to see the real world with their own eyes, which is the equivalent of the fictional world. On the other hand, the tourists' experience is strongly enhanced by the text, so that what they see is not the place itself, but the place seen by the author, who is credited with capturing the essence of the place. The conflicting desire to see places through the author's eyes, coupled with his or her own experiences, are inextricably linked in the experience of the literary tourist (van Es, Reijnders, Bolderman, Waysdorf, 2021). Both literature and movies influence motivation to visit a given place. These two types of tourism (literary and film) create new tourist destinations and ideas about these places through imaginative narratives and attributes such as so-called production values, including characters and their stories, emotions along with their audio and visual aesthetic effects. However, in both cases, the importance of interconnectedness and interdependence between people – viewers/readers and characters, characters and authors, stories (viewers'/readers' personal stories and the characters' stories) and places is emphasized (O'Connor, Kim, 2014).

3. Method

In order to achieve the purpose of the study, it was important to determine whether and to what extent the respondents, after reading or watching a given work, felt the need to become interested in their depicted world, fictional or real places or the country, being the background of the plot. An online survey (CAWI, see Babbie, 2004) using the Google Forms tool was used to analyze the research problem. The completed survey questionnaire was made available on April 27, 2022 on the Google Forms platform, and then closed on May 15, 2022. The data was downloaded and analyzed in Microsoft Excel. A 7-point Likert scale was used in the survey containing answers 1 = 'extremely negative or extremely untrue', 7 = 'extremely positive or extremely true', depending on the question.

The study consisted of 200 respondents, of which 83.5% were women, 16% men, and 1 person described their gender as "other" (Table 1). The age of respondents was not highly differentiated. The largest group comprised people aged 18-26 and accounted for more than half of the respondents. When asked about the place of residence, the largest number of people, i.e. 69 (34.5%) represented cities with over 500,000 inhabitants. The second group in line included individuals living in towns with a population of up to 50,000. inhabitants and accounted for 25% of the total population. The smallest group - 19 people - were respondents living in towns with a population of between 50,000 and 150,000.

Table 1.
Characteristics of the respondents

Criterion	Category	Number of people	Percentage
Gender	Female	167	83.5%
	Male	32	16%
	Other	1	0.5%
Age	15-17	7	3.5%
	18-26	107	53.5%
	27-35	26	13%
	36+	60	30%
Domicile	Rural area	41	20.5%
	Town up to 50.000	50	25%
	Town form 50.000 up to 150.000	19	9.5%
	City form 150.000 up to 500.000	21	10.5%
	City over 500.000	69	34.5%
Level of education	Primary	5	2.5%
	Primary vocational	1	0.5%
	Secondary	70	35%
	Higher	124	62%

Source: own elaboration.

When answering the question about education, the vast majority of respondents pointed to higher education, with a share of 62%. The smallest group comprised 1 person with primary vocational education.

In the study, the typology of respondents in terms of sensitivity to place narrative was defined on the basis of the scale proposed by Chen, Liu, Zhang and Xiao (2019). The authors used a validated scale (see Table 3) to assess the impact of the tendency towards visiting places mentioned in hit songs. At the same time, they proved that the level of sensitivity to narrative in the song has a moderating power when making decisions about the choice of a tourist destination. The division into 3 groups allowed to better define the factors that should be taken into account by the authorities of tourist destinations when constructing film and literary tourism products (Table 2).

It is worth noting that in order to determine the profile of a person sensitive to the narrative related to the place on the basis of the conducted research, it will most likely be a woman aged 18-26, living in a village or a small town and having a university degree.

In turn, an undecided person will probably be a woman aged 18-26 living in an agglomeration and having higher education. A person insensitive to the narrative is most likely also a woman aged 18-26 living in the countryside with a university degree. An attempt at profiling based on demographic data does not provide unambiguous results regarding characteristics of the target group. Therefore, it became important to analyze the behavioral features that could be taken into account while constructing a tourist offer.

Table 2.

Characteristics of people sensitive to the narrative related to the place described in the literary or film work in terms of basic demographics

Demographic criteria		Level of sensitivity to narrative related to the place		
		Low	Medium (indecisive individuals)	High
Gender	Female	10.50%	42.50%	30.50%
	Male	2.50%	8.00%	5.50%
	Other	0	0	0.50%
Age	15-17	1.50%	0.50%	1.50%
	18-26	6.50%	27.00%	20.00%
	27-35	1.50%	6.00%	5.50%
	36+	3.50%	17.00%	9.50%
Domicile	Rural area	5.00%	7.50%	8.00%
	Town up to 50,000	2.50%	12.50%	10.00%
	Town form 50,000 up to 150,000	1.00%	6.50%	3.00%
	City form 150,000 up to 500,000	1.00%	3.00%	5.50%
	City over 500,000	3.50%	21.00%	10.00%
Level of education	Primary	0.00%	0.50%	2.00%
	Primary vocational	0.00%	0.00%	0.50%
	Secondary	6.50%	21.00%	7.50%
	Higher	6.50%	29.00%	26.50%
Total (%)		26 (13,0%)	101 (50.50%)	73 (36..50%)

Source: own elaboration.

4. Findings

The part of the study concerning the typology of respondents, defining it in terms of level of sensitivity to narrative related to the place, concerned the determination of the respondents' attitudes towards 2 variables - influence of the narrative and place of action/plot influence (Chen, Liu, Zhang, Xiao, 2019). In the study, questions were asked about the assessment of a given factor's impact on various aspects related to the associations of the narrative appearing in books or series with a given place, using a Likert scale¹. Potential tourists were typified into 3 types in terms of sensitivity to narration with a use of answers to 7 questions on the given scale (Table 3).

Due to the structure of the 7-point Likert scale with a middle category (not forcing), it was decided to define people whose average for 7 answers, being within the range of 3.01-4.99, as "indecisive". Narration-insensitive individuals had an average for 7 questions below 3.01, while sensitive individuals had an average above 4.99.

¹ The impact of all items within each factor was measured using a 7-point Likert scale, where 1 means 'very little influence/fully disagree' and 7 means 'very much influence/fully agree'.

Table 3.

Characteristics of people sensitive to narration in terms of attitudes related to the place described in a literary or film work

Narration factors	Level of sensitivity to narrative related to the place			General statistics		
	Low	Medium (indecisive people)	High	Mean	Std. Dev.	Variance
Narration influence	3.29	5.33	6.33	5.43	1.60	2.55
When reading books, I can easily imagine the setting of the action	4.08	5.70	6.40	5.75	1.39	1.94
I can imagine myself taking part in events from a book or TV series/movie	2.58	5.05	6.18	5.14	1.76	3.11
When reading a book or watching a movie/series, I get emotionally involved in the events described	3.23	5.24	6.42	5.41	1.57	2.47
Place of action influence	1.87	3.38	5.10	3.78	1.74	3.03
It is important to me where the action in a book or film/series takes place	2.62	3.97	5.32	4.29	1.63	2.65
I get very attached to the setting from a book or movie/series	2.08	3.00	5.11	3.65	1.66	2.75
I get more satisfaction from visiting a place I know from a book or a movie/series than any other place	2.08	3.42	5.33	3.94	1.87	3.51
I would not trade a visit to the setting of my favorite book or favorite movie/series for anything else	1.65	2.75	4.53	3.26	1.79	3.22
Average for types	2.62	4.16	5.61	4.49	1.89	3.56

Source: own elaboration based on scale proposed by Chen, Liu, Zhang, Xiao, 2019; in the table, average values for 1-7 on the Likert scale, were used.

In this study, undecided people accounted for 50.5% of the study population, people with low sensitivity to the narrative - 13.0%, and people with a high level of sensitivity - 36.5%. This means that in the analysis of the potential attractiveness of a place that is to use attributes related to a literary or film work, great attention should be paid to the needs and preferences of undecided people. Due to the adopted division criteria, this typology can be used many times, although the number of people for a given type in each study may change. On the basis of the respondents' average ratings, a detailed characterization was made of 3 types of people sensitive to narration in terms of attitudes related to the place described in a literary or film work.

Comparing both groups of factors the attitude towards the place in the narrative, the features of the narrative (average 5.43) are much more important than the place of the plot/action (average 3.78). In the case of people with low sensitivity to narration, one can talk about low values of features stimulating sensitivity (3.29 - influence of narration and 1.87 - influence of plot/action setting). However, it is worth mentioning that, as in the case of people representing other types, people who are insensitive to narration easily imagine the setting of the action when reading books (4.18 average).

Undecided people, constituting the largest group in the surveyed population, find it very easy to imagine the place of action while reading books (5.75 average). These people are least characterized by the attitude described by the statement "I would not trade a visit to the setting of my favorite book or my favorite film/series for anything else" (2.75 average).

The group of people with a high level of sensitivity to narrative is constituted by slightly different characteristics from the other types. The most important feature is emotional involvement in the described events while reading a book or watching a movie/series (average 6.42). The second important feature is, as in the case of other types, the ease of imagining the place of action while reading books (6.40 average). To the least degree, these people are characterized by the attitude described in the statement "I would not trade a visit to the setting of my favorite book or favorite film/series for any other" (4.53 average), although this feature occurs to a much greater extent than in the case of other types.

Table 4.

Willingness to visit a place described in a book or shown in a series in groups of people with varying levels of sensitivity to narrative

Willingness to visit a place described in a book or shown in a series	Level of sensitivity to narrative related to the place			General statistics		
	Low	Medium (indecisive people)	High	Mean	Std. Dev.	Variance
My desire to visit the place grew because it was the backdrop of the film	2.81	3.34	4.95	3.86	2.07	4.28
A film made in a country sparked my curiosity about that country	2.65	3.94	4.97	4.15	2.02	4.07
If I visited a place where a movie I am a fan of was shot, I would feel like part of the production	2.23	2.49	4.14	3.06	2.04	4.17

Source: own elaboration.

Table 5.

Examples of places from films and novels that respondents would like to visit

Countries (number of indications)	Localization	Titles of works
1. New Zealand (9)	Hobbiton	"The Lord of the Rings" movie series "Hobbit" movie series
2. England (9)	Castle of Alnwick, London – Notting Hill, Harry Potter Theme Park	"Harry Potter" movie series "Notting Hill" movie "Game of Thrones" series
3. USA (6)	New York New Orleans, Route 66, Los Angeles	"Gossip girl" series "Friends" series "Sex in the City" movie series "The Originals" series "Cars" movie "Lucifer" series
4. Scotland (4)	Culloden Moore, castles used in movie series production	„Outlander” series "Harry Potter" movie series
5. Croatia (4)	Dubrownik	"Game of Thrones" series

Cont. table 5.

6. Poland (3)	Ogrodzieniec Castle (Podzamcze village), Warszawa (Warsaw)	"The Witcher" series Book series by R. Mróz about Joanna Chyłka
7. Northern Ireland (2)	Castles and places shown in the production	"Game of Thrones" series
8. Spain (1)	Barcelona, Sevilla	Book series by C. R. Zafona
9. China (1)	Park (pattern for director)	"Avatar" movie series
10. Egypt (1)	Nile River	"Death on the Nile" movie and book
11. Greece (1)	Skopelos Islands, Skiathos	"Mamma Mia" movie series
12. France (1)	Paris	"Emily in Paris" series
13. Italy (1)	Crema town	"Those Days Those Nights" movie

Source: own elaboration.

The analysis of the willingness to visit the place described in the book or shown in the series among groups of people with varying levels of sensitivity to narrative allows us to indicate the group of people sensitive to the narrative as the most willing to visit the country or the specific place where the action of the film or book took place (Table 4).

In turn, the countries that the respondents would most like to visit in the near future, related to the plot or action presented in a literary or film work, are New Zealand (Hobbiton used in the "The Lord of the Rings" series), England ("Harry Potter", "Notting Hill" and "Game of Thrones") and the USA ("Gossip Girl", "Friends", "Sex and the City", "The Originals", "Cars", "Lucifer"; Table 5).

People with a low level of sensitivity to narrative related to the place represent the highest group of potential tourists, who after reading any book or watching a film/series, would like to visit the place described in the narration (57.69%; Table 6). This may be connected with a feature of people who are insensitive to the narrative, in which they feel the need to physically check out the place of description. Their emotions seem to be fully aroused to a lesser extent after reading a novel or watching a movie. However, questions diagnosing such emotional states were not asked.

Table 6.

Percentage of people who visited a place featured in a literary or film work

Have you visited any places depicted in a work after reading a book or watching a film/series?	Level of sensitivity to narrative related to the place			
	Low	Medium (indecisive people)	High	Total
No	42.31%	52.48%	47.95%	49.50%
Yes	57.69%	47.52%	52.05%	50.50%

Source: own elaboration.

The percentage of people who decided to visit the places described in a novel or movie among people with a high level of sensitivity to narrative exceeded half the population (52.05). In the case of undecided people, this level reached 47.52%. From the point of view of people responsible for creating film or literary tourism products, it is worth focusing on people who are insensitive to narration because, to a great extent, they are willing to make the effort to visit the place described in the work.

Respondents were asked to indicate the places and countries they had visited due to a description in a literary or movie work. The largest number of respondents visited locations in their home country – Poland (18 indications), England (12 indications) and Croatia (6 indications) (Figure 1).

In Poland, the respondents most often visited Warsaw and places such as: the "Hard Rock Cafe" - a restaurant and cafe, which was included in crime books by Remigiusz Mróz, telling the story of a lawyer – Joanna Chyłka, as well as the Skylight building, which was the workplace of the heroes. The street where the house featured in the series "Nanny" was located is also mentioned. The second most frequently indicated city in Poland was Sandomierz, which was visited by the respondents due to the filming of the series "Ojciec Mateusz", Polish version of "Father Brown". The respondents also visited the castle in Ogrodzieniec related to "The Witcher" movie series, and Malbork because of the same series. Two people also pointed to the city of Poznań, who visited places included in the series "Jeźdźcy" and from the film "Time Surfers".

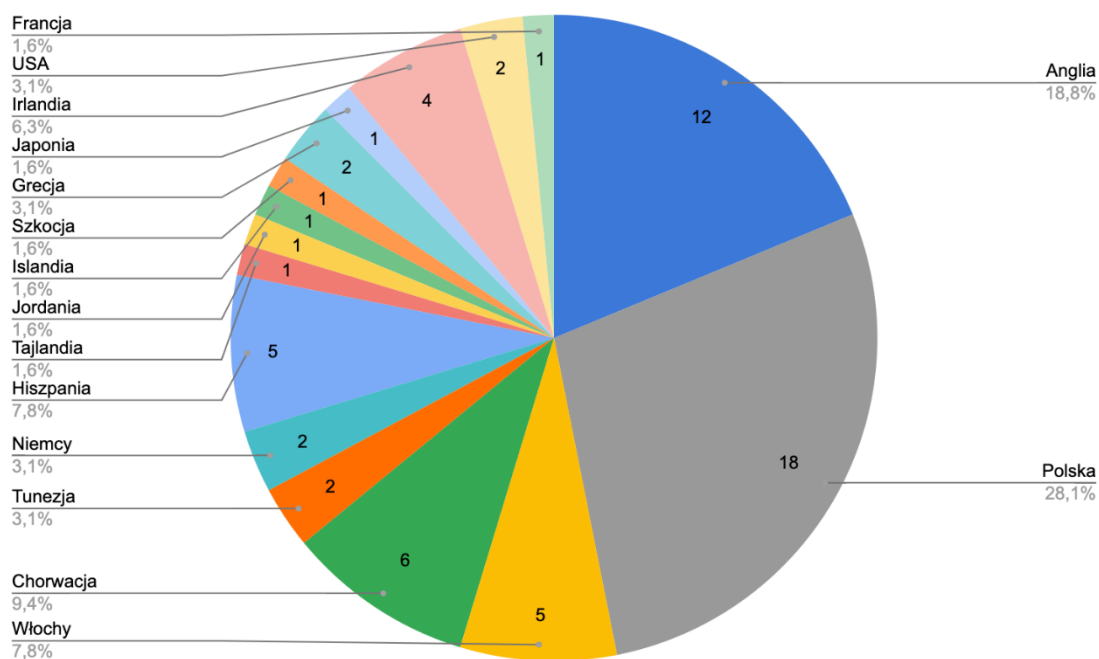


Figure 1. Share of countries indicated by respondents visited due to participation in a literary or film work.

Source: own elaboration.

In addition, the respondents traveled to: Jeruza, the village which is the background of the series "Ranczo", the castle in Kórnik, which was included in the film "Where is the Third King" and to Kodenia, a village described in the book "Błogosławiona wino" by Zofia Kossak. The second most mentioned country was England, which attracted respondents mainly due to the "Harry Potter" movie series and "Notting Hill" movie. Visited places were: King Cross

Station, Warner Bros Studio, Hogwarts Express, Great Hall in Caerphilly Castle (Oxford) and London's Notting Hill.

An important tourist destination for the respondents was also Croatia, especially Dubrovnik, where the respondents visited the city following the footsteps of the "Game of Thrones" series. Subsequently, the respondents pointed to visiting places in Ireland, which were the background for "Game of Thrones" movie series, the film "Ps. I love you" and Scotland, which is the backdrop of the "Outlander" series and the "Braveheart" movie.

Places in Italy were also indicated. Rome was pointed out as the backdrop of "Those Days, Those Nights" and "Roman Holiday" movies. Tuscany was visited because of the "Gladiator" movie and the town of Corleone captured in "The Godfather" movie series. In addition, Tunisia was indicated as the amphitheater of Al Džamm was playing the scene of the Colosseum in "Gladiator", as well as the Onk Jemal desert, which was the town of Mose Espa in the "Star Wars" series. In Spain, places such as Barcelona were indicated, where respondents followed in the footsteps of the characters from Zafon's trilogy, Sevilla, where places featured in the "Game of Thrones" series, and Plaza de Espana, featured in the "Star Wars" series, were indicated.

As for places in other countries, some mentions could be the beach in the movie "The Beach" (Thailand), the desert in the movie "Dune" (Jordan), the landscapes in the movie "Everest" (Iceland), "Outlander" and "Game of Thrones" in Scotland, islands captured in "Mamma Mia" in Greece, Kyoto captured in "Memoirs of a Geisha" (Japan), Paris captured in "The Hunchback of Notre Dame" (France). In the case of the USA, an amusement park in Orlando and New York were indicated, which became the scene of the plot of the film "Breakfast at Tiffany's".

Among the respondents who visited a given place because of a book or a film/series, the production about Harry Potter is in the lead. It can be assumed that this production is extremely popular among the surveyed population (70% of them are below the age of 36), and thus, some of them consider themselves to be its fans who follow the places shown in the movies and books with interest. The situation is similar with the production of "Game of Thrones". Respondents equally often visit places featured in the series and in the novels by George R.R. Martin, which may also be due to its popularity. The two aforementioned productions, which stand out from all the others, share one common feature. They are fantasy productions. It seems, therefore, that works of this type have great potential for creating film tourism products, related both to the place of filming and the plot of the work. The fact that they seem magical or unrealistic only intensifies the desire to get to know the locations included in one's favorite productions.

The analysis of the tendency towards visiting places related to the plot was enriched in the study by specifying factors that are considered important when assessing the plot of a film (Table 7). These factors may be a hint² as to what to follow when constructing a tourist offer related to movie production.

Table 7.

Significance of various factors used in the narrative of a film (pull factors)

Narration factors	Level of sensitivity to narrative related to the place			General statistics		
	Low	Medium (indecisive people)	High	Mean	Std. Dev.	Variance
Location attributes	2.97	4.15	5.04	4.32	1.73	2.99
Scenery/Landscape	3.35	4.86	5.34	4.84	1.67	2.78
The location of a movie plot	2.46	3.67	4.53	3.83	1.87	3.49
Cultural attractions of the depicted world	3.12	3.92	5.25	4.3	1.64	2.69
Performance attributes	4.33	5.39	5.91	5.44	1.47	2.19
Movie plot	5.12	6.22	6.41	6.15	1.28	1.63
Actors' experience and skills	4.46	5.63	6.23	5.7	1.42	2.02
Theme (romance/adventure)	3.42	4.33	5.08	4.49	1.71	2.93
Personality attributes	4.50	5.63	6.19	5.69	1.48	2.19
Cast	4.42	5.63	6.25	5.7	1.42	2.01
An actor's portrayal of a character	4.58	5.62	6.14	5.68	1.5	2.38

Source: own elaboration based on the scale used by Gjorgievski, Melles-Trpkova, 2012.

As for the factors positively assessed in a movie production, the most important group was related to personality, associated with the selected actors and the characters played (5.69 average), following with the performance (5.44 average), and then the way of showing the place (4.32 average). In turn, the most important factor in assessing the work was a movie plot (6.15 average), the experience/skills of the actors and the actors selected for the role (5.7 average) and the portrayal of the character by the actor (5.68 average). The least important factor was the knowledge of the location of the film's plot (3.83 average), which means that the product of film tourism should be addressed to tourists who have not yet visited a given destination. It also means that potential tourists want to explore new worlds rather than delve into familiar places.

For people with low sensitivity to narration, who have a high willingness to "taste" the place associated with the movie or novel, the most important attribute of the work's narrative was the movie plot (5.12 average), the actor's portrayal of the character (458 average) and actors' experience and skills (4.46 average). A similar sequence of features, but with a greater intensity, occurred in the case of indecisive people (averages on average: 6.22, 5.63 and 5.63, respectively). The least significant factor influencing the perception of the narrative was knowledge of the location of the movie plot (3.83 average for the entire population). This means

² It was assumed that in the 21st century, movies attract more tourists than literary works, due to their much larger audience.

for the authorities of a given town or region that city-placement must be carefully considered. The costs of such placement may not bring the expected results if the plot is unattractive or if the actors play the characters in the plot in an incompetent manner.

5. Discussion and Conclusions

In order to determine the possibility of using narrative attributes used in film or literary works in the creation of tourist products, the division of potential tourists into 3 groups was conducted. According to the criterion of the attitude towards the narrative related to the place in the film and literary works, a group of people with a high, medium and low level of sensitivity to narrative was selected. Such a division has not been used so far in relation to film-related destinations, only in places referring to music works (Chen, Liu, Zhang, Xiao, 2019).

The greatest declarative inclination to visit a place related to the plot is represented by people with a high level of sensitivity to narrative, which is in line with expectations and the results of research related to places included in music works. However, people with a low level of sensitivity to narrative, more often decide to visit a place related to it. This may be due to their emotional insufficiency related to the narrative and when planning tourist trips, they want to become a "real" part of the plot. On the other hand, people with a high level of sensitivity are most emotionally connected with the narrative and, despite a higher declarative willingness to visit places related to the plot, they less often decide to actually travel. There is a similar emotional reaction as in the case of places included in music works. The high emotional involvement of people with a high level of sensitivity to narrative means that the emotions associated with watching a film or reading a book seem to be enough for them that they do not express a very intense need to visit the place where the action of the work takes place.

The lowest willingness to visit places related to the narration was declared by undecided people (with an average level of sensitivity to narrative) which, at the same time, constituted the largest group in the study. From the point of view of people responsible for film tourism, it should be an incentive to focus on this group. Places related to film and literary works in one's home country are most often visited.

The lowest level of willingness to visit places related to the plot was declared by undecided people (with an average level of sensitivity to narrative) which, at the same time, constituted the largest group in the study. From the point of view of people responsible for film tourism, it should be an incentive to focus on this group. Places related to film and literary works in one's home country are most often visited.

The phenomenon of film tourism, as well as the expression of the willingness to visit places created as an emanation of narrative presented in one's favorite books or movies, defines a demand for the creation of completely new locations on the tourist world map. In this regard, there are analogous reactions to the places included in songs.

In terms of future research, it is worth empirically verifying the possibility of developing film and literary tourism products based on fictional places. In the research, emotional attachment to places given the plot of such fantasy productions as "Harry Potter" or "Game of Thrones" was strongly emphasized. The constant interest of respondents in places such as theme parks or towns that perfectly reflect the threads being part of the plot makes it possible to create others with a completely different theme. The best opportunities for development are found in places that refer to productions characterized by a high level of popularity, having a wide range of fans willing to travel far to experience the emotions of a movie or a book for the second time.

References

1. Babbie, E. (2004). *Badania społeczne w praktyce*. Warszawa: PWN.
2. Buczkowska, K. (2009). Kulturowa turystyka eventowa. Współczesne formy turystyki kulturowej. In: K. Buczkowska, A.M. von Rohrscheidt, *Współczesne formy turystyki kulturowej* (pp. 91-118). Poznań: AWF.
3. Butler, R. (2011). It's only make believe: the implications of fictional and authentic locations in films. *Worldwide Hospitality and Tourism Themes*, Vol. 3, No. 2, pp. 91-101. <https://doi.org/10.1108/17554211111122961>.
4. Chen, Y., Liu, P., Zhang, J., Xiao, X. (2019). Falling in love with a place because of a song: the transportation effects of music on place attachment. *Asia Pacific Journal of Tourism Research*, 24(9), pp. 882-893.
5. Chymkowski, R., Zasacka, Z. (2020). *Stan czytelnictwa w Polsce w 2020 roku*. Biblioteka Narodowa.
6. Ciechomski, W., Romanowski, R. (2016). Segmentacja nabywców produktu terytorialnego jako element budowania przewagi konkurencyjnej. *Marketing i Rynek*, 10(CD), 75-88.
7. Contu, G., Pau, S. (2022). The impact of TV series on tourism performance: the case of Game of Thrones. *Empirical Economics*, 63, pp. 3313-3341, <https://doi.org/10.1007/s00181-022-02228-2>.
8. Crompton, J.L. (1979). Why people go on pleasure vacation. *Annals of Tourism Research*, Vol. 4, No. 6, pp. 408-424.
9. Dann, G.M.S. (1977). Anomie, ego-enhancement and tourism. *Annals of Tourism Research*, No. 4, pp. 184-194.

10. Daszkiewicz, M., Wołosecka, A. (2019). Development of a brand idea as the basis for region branding. A case study of the Jizera mountains and the foreland region. *Scientific Papers of Silesian University of Technology. Organization and Management*, Vol. 139, pp. 107-121.
11. Gazley, A., Clark, G., Sinha, A. (2011). Understanding preferences for motion pictures. *Journal of Business Research*, 64(8), pp. 854-861, DOI: 10.1016/j.jbusres.2010.09.012.
12. Gjorgievski, M., Melles-Trpkova, S. (2012). Movie induced tourism: A new tourism phenomenon. *UTMS Journal of Economics*, 3(1), pp. 97-104.
13. Hudson, S., Wang, Y., Gil, S.M. (2010). The influence of a film on destination image and the desire to travel: a cross-cultural comparison. *International Journal of Tourism Research*, Vol. 13. No. 2, pp. 177-190, <https://doi.org/10.1002/jtr.808>.
14. Itoo, M., Nagar, K. (2019). Audience responses towards positive and negative destination placement in films: an experimental investigation. *International Journal of Hospitality and Tourism Systems*, 12(1), pp. 75-82.
15. O'Connor, N., Kim, S. (2014). Pictures and prose: exploring the impact of literary and film tourism. *Journal of Tourism and Cultural Change*, Vol. 12, iss. 1, pp. 1-17, <https://doi.org/10.1080/14766825.2013.862253>.
16. Olkusz, K. (2018). Transfikcyjność w literaturze. *Zagadnienia Rodzajów Literackich*, Vol. 61, No. 1(125), pp. 159-165.
17. Pham, D.D., Hwang, Y.-H. (2022). Halo effects of a Country in film-induced tourism: A case study of the Ha Long Bay, Vietnam in 'Kong: Skull Island'. *Journal of Destination Marketing & Management*, Vol. 25, DOI: 10.1016/j.jdmm.2022.100722.
18. Romanowski, R. (2013). Relacyjne przesłanki tworzenia megaprojektu terytorialnego. In: W. Ciechowski, R. Romanowski (ed.), *Marketing terytorialny oparty na wiedzy*. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego.
19. Stasiak, A. (2009). Turystyka literacka i filmowa. In: K. Buczkowska, A.M. von Rohrscheidt, *Współczesne formy turystyki kulturowej* (pp. 223-265). Poznań: AWF.
20. Urbańczyk, A. (2018). Set jetting szansą rozwoju obszaru recepcji (na przykładzie Nowej Zelandii). In: P. Gryszel (ed.), *Spojrzenie na współczesną turystykę* (pp. 30-40). Jelenia Góra: AD REM.
21. van Es, N., Reijnders, S., Bolderman, L., Waysdorf, A. (2021). *Locating Imagination in Popular Culture. Place, tourism and belonging*. Rotterdam: Routledge, <https://doi.org/10.4324/9781003045359>.
22. von Rohrscheidt, A.M. (2016). *Turystyka Kulturowa. Fenomen, potencjał, perspektywy*. ISBN 978-83-930211-4-7.
23. Xiaohong, Wu; Ivan. Ka Wai Lai (2022). How destination personality dimensions influence film tourists' destination loyalty: an application of self-congruity theory. *Current Issues in Tourism*, DOI: 10.1080/13683500.2022.2140401.

OVERVIEW OF SUPPLY CHAIN MANAGEMENT CHALLENGES

Tomasz SURMACZ^{1*}, Wiesław SZOPÍŃSKI²

¹ University of Rzeszow, Department of Marketing and Entrepreneurship; tsurmacz@ur.edu.pl,
ORCID: 0000-0001-7086-1322

² University of Rzeszow, Department of Marketing and Entrepreneurship; wszopinski@ur.edu.pl,
ORCID: 0000-0003-2524-440X

* Correspondence author

Purpose: The article aims at presenting possible challenges faced by supply chains in the upcoming years.

Design/methodology/approach: The article employs analysis of the literature on the subject.

Findings: As a result of the critical analysis of the literature, the authors have highlighted what they consider to be the most significant challenges facing supply chain managers in the coming years. These include meeting increasing customer demands for on-time delivery, the skillful use of new technologies and an increasing emphasis on environmental issues in supply chain management. These are challenges arising from changes in the business environment. The last few years, and many examples of broken supply chains, have shown that changes in the way we think about how supply chains operate are required in many areas. Trends in the environment are forcing the challenges listed above to be addressed urgently. These challenges are closely interconnected. For example, changes in purchasing behaviour are also increasingly concerned with environmental issues, which translates into the need to 'green' supply chains. Also, customer expectations for greater visibility of processes in supply chains and increasing pressure to deliver as quickly as possible (which is linked to the growth of e-commerce), are driving the need for new technologies, including automation.

Research limitations/implications: The authors have focused on the most important trends and challenges and the article certainly does not cover all the topics studied. It is to some extent a subjective selection made by the authors. In addition, it should be noted that dynamic changes in the environment may influence the emergence of new challenges that are not presented in the article.

Practical implications: The supply chain management challenges presented in the article may be of interest to those responsible for the operations of supply chains within companies.

Originality/value: The article is a subjective indication of the most important trends in supply chain management and stems from a review of the literature on the subject. Although the issues analysed are present in other research papers, here we have the authors' choice.

Keywords: supply chain management, smart logistics, GSCM.

Category of the paper: Viewpoint.

1. Introduction

Supply chain management has progressed from a theoretical concept to a widely accepted practical paradigm. Since the increased opportunities for information exchange thanks to the development of the Internet, companies have been keen to use the concept of supply chain management and, despite implementation difficulties, its popularity has grown. This was due to the increasing complexity of inter-organisational linkages, particularly for multinational companies. In a globalised world, proper supply chain management can give a competitive advantage. At the same time, it should be noted that there are many risks and threats to the operation of supply chains in the modern world.

This article aims to identify trends in the functioning of supply chains and also to present the most important challenges in the coming years. The rationale for the article was the changes in the turbulent business environment, which have greatly influenced the way we think about the functioning of supply chains in the future. Using a critical analysis of the literature on the subject under study, the authors sought to identify the most likely trends and resulting challenges for supply chain management.

2. Supply Chain Management

Supply chains are an integrated network of entities responsible for supply, manufacture, storage, and distribution of goods and materials. The entities making up supply chains are suppliers, manufacturers, distributors and logistics operators. Supply chains can differ in terms of size and complexity depending on industry specifics (Simchi-Levi, 2005; Chopra, Meindl, 2012).

In an increasingly competitive environment, companies have realised that success can be determined by a well-functioning supply chain according to the principle that the weakest link can affect the whole chain. This leads to the notion of managing the supply chains in order to improve the flow of goods and information.

Supply chain management is the management of relationships with suppliers, customers and clients to ensure the highest customer value at the lowest cost for the entire supply chain (Christopher, 1998).

Supply chain management is aimed at orchestrating intra- and inter-firm activities to create integrated and synergistic relationships. These linkages in the supply chain, can be defined as the “explicit and/or implicit connections that a firm creates with critical entities of its supply chain in order to manage the flow and/or quality of inputs from suppliers into the firm and of outputs from the firm to customers (Rungtusanatham et al., 2003)”.

The management of supply chains must ensure the efficient coordination of cooperation between partners in the chain. Effective management of supply chains should lead to a stronger competitive position for companies.

Through supply chain management, companies are able to develop a number of benefits such as increased customer service, greater responsiveness to market demands, the ability to anticipate changes in consumer demand, better inventory management and others.

3. Key trends and risks in the environment

Factors that may influence the functioning of supply chains are of endogenous and exogenous character. The former may include inter-organisational cooperation and communication, supply chain design and objectives, how the supply chain is integrated, inventory control techniques and methods and others. From the point of view of this publication, exogenous factors seem to be more relevant. These include the international environment, the megatrends shaping this environment, the impact of customers and their power as well as changes of a technological nature (Wincewicz-Bosy et al., 2017).

Walters (2006) looks at factors and risks affecting supply chains in a similar way. Internal factors mainly depend on relationships with customers and suppliers while external factors are related to the economic, political, social and natural environment.

In today's globalised world, supply chains are increasingly complex. The longer international supply chains are, the greater the risk of disruption. In theory, companies have always been aware of these risks, but the Covid-19 pandemic has made the need to be flexible crucial if they want to be competitive. Other events such as the problems with the Suez Canal and the war in Ukraine further influenced the creation of disruptions along supply chains and caused many companies to take risk management more seriously. As a result, companies will need to rethink the configuration of their chains.

In order to properly control the supply chain, companies need to be able to locate their materials and products. Visibility in the supply chain is becoming a key challenge. At the same time, new technologies mean that companies are able to collect and share real-time data, which should translate into a faster response when problems arise. Technological possibilities are increasing, but often companies do not fully know how to use particular techniques. There is a need to develop coherent strategies for operating in the new digitized chains.

Climate change is undoubtedly one of the most significant problems the world faces today. This inevitably also applies to logistics processes and the functioning of supply chains. Companies are aware of this and have been taking actions of greening their supply chains for years. Now environmental practices can prove to be a competitive factor. At the same time, it is a major challenge from the point of view of companies. It is related to a number of issues

such as new packaging methods, optimisation of transport routes and the use of renewable energy.

The above considerations may lead to the conclusion that the most important trends on the basis of which supply chains must be modified are:

- consumer pressure and increasing demand on the availability of goods and on companies to reduce their environmental impact,
- the increasing importance of visibility of all processes in supply chains due to the unpredictability and disruption of flows in the chains,
- the development of technology and the growing amount of data that can be used to improve supply chain operations.

4. Major challenges of supply chains

Supply chain management has become a source of competitive advantage for many companies, especially larger ones. However, in addition to the benefits, there are risks and challenges associated with it. These are largely due to the trends and phenomena emerging in the corporate environment outlined earlier, which must be taken into account in the coming years. Of course, there are many more challenges, but for the purposes of this publication, the authors have focused on the most important ones after analysing the literature sources. At the same time, it is important to be aware that changes in the environment can very quickly make new challenges, that are not currently identified, emerge.

As noted earlier, one of the challenges arising from changes in the market is dealing with increasing customer expectations in terms of service quality. Logistics customer service has always been treated as a factor to increase competitiveness in the market (Yazdanparast et al., 2010). Emmet (2007) briefly defines customer service as the ability to continually exceed customer expectations.

Today's consumers are increasingly exacting about service levels and delivery times. Thus, logistics processes are becoming more and more important and need to take into account the increasing demands of customers. This applies to both business customers and end customers and their sales experience.

The development of e-commerce has accelerated significantly in recent years and has made anticipating market changes even more important. Online shopping has also become popular among people who have not previously used this form. This has caused, and will continue to cause, difficulties related to increased demand and rising consumer expectations in terms of delivery times.

Companies, if they have not already done so, need to ensure the visibility of all processes in their supply chains. This applies to both transports, where visibility of shipments is crucial to notify customers about delays and take appropriate action in the event of problems, as well as to flow of goods in warehouses.

Many authors (Shahin et al., 2020; Khanchanapong et al., 2014) indicate that increased use of automation improves outcomes such as delivery times and costs. Companies will increasingly have to try to automate their processes. This has been identified for many years as a future trend in line with the concept of Industry 4.0. New technologies such as blockchain, artificial intelligence, automation can make operations in supply chains more transparent and visible and the chains themselves are already likely to become more resilient and flexible. Technological advances can increase productivity, save time and reduce the risk of errors, thereby reducing costs. This is particularly true of automation and robotisation in packaging, labelling or warehouse operations. Furthermore, the labour shortage problems during the pandemic have influenced the increased interest in automation processes. Of course, there are more new technological developments.

Some of industry 4.0 technologies include Blockchain, Big Data Analytics, Internet of Things and Cloud Computing. DHL identified six technologies that will cause significant changes in logistics by 2030 (Ecommercenews, 2016). They are: Big Data, Sensor Technology, Augmented Reality, 3D printing, Robots, and Drones. Some of the solutions are already implemented by companies, however, companies will try to use new solutions on a wider scale, especially as some of them are relatively cheap (e.g. cloud computing). According to the Capgemini report (2021), 66% of organisations anticipate significant changes in their supply chain strategy over the next three years in terms of the use of modern technology. This is due to market disruption and difficulties with demand planning and the associated risks.

The ever-increasing amount of data available through the IoT, among other things, will require insightful analysis which should facilitate better planning in supply chains. Access to data and also the ability to use and analyse it appropriately can make the supply chain more efficient and effective.

Successful organisations must be effective in the areas of customer service focus and information management. But another important theme linking the previous two is the growing importance of environmental issues in supply chains. Paying attention to the environment is increasingly becoming a requirement for long-term profits and also for ensuring the quality of resources in supply chains (Krejci et al., 2010). Focusing on environmental issues in supply chains operations balances market demands and environmental needs, while at the same time being important in terms of increasing customer demands and environmental awareness. This raises the significance of green supply chain management (GSCM) topic. Although the origins of the green supply chain concept date back to the early 1990s, an increase in interest from academics is noticeable after 2000 (Ming-Lang et al., 2019).

Andic et al. (2012) consider GSCM to be efforts to minimise and preferably eliminate any negative environmental impacts of supply chains. According to Zhu et. al. (2005), GSCM is "an important new archetype for enterprises to achieve profit and market share objectives by lowering their environmental risks and impacts while raising their ecological efficiency".

Many countries and international organisations are recommending closer attention to environmental issues. For example, the European Union (2011) has emphasized the importance of sustainable development for years, also in the context of transport, as a factor shaping future development.

Environmental changes will be reflected in new legislation. It may be that companies that pollute less will be given a premium in terms of winning new contracts. It is important to be aware that regulations concerning, for example, emission reductions will have a significant impact on the initial increase in operating costs for companies.

Of course, environmental action in supply chains is currently undertaken mostly by large companies (perhaps some of whom see this as part of building the image). However, over time, smaller companies should emulate the larger ones in terms of environmental standards based on their experiences (Ming-Lang et al., 2019). Over time, smaller companies will increasingly contribute to offsetting environmental negatives.

At the same time, despite a growing body of literature on sustainable supply chains, there is a need to develop new models and methods to implement new solutions (Roy et al., 2018). Thus, the challenge for companies will not only be to rethink the functioning of their supply chains and integrate environmental aspects into their operations, but also to adopt specific models to make such a change (Surmacz, Wierzbinski, 2019).

5. Conclusions

Presented from the authors' point of view, the three most important challenges for supply chains could be summarised by the term smart logistics. According to Lee et al. (2016) smart logistics is aimed at solving problems such as increased vehicle fleets, transportation networks, and increased delivery demands. Therefore, smart logistics helps to satisfy customer expectations along with meeting environmental goals using different ICT tools and techniques. It will be the task of those managing supply chains to reconcile these issues. New technologies can help to meet customer expectations and at the same time have a positive impact on environmental issues. Hence, the challenges of managing supply chains are interlinked and the ability to deal with them will affect the effectiveness and efficiency of supply chains.

References

1. Andic, E., Yurt, O., Baltacioglu, T. (2012). Green supply chains: efforts and potential applications for the Turkish market. *Resources, Conservation and Recycling* 58, 50-68.
2. CAPGEMINI report (2021). *The wake-up call: Building supply chain resilience in consumer products and retail for a post-COVID world*. https://www.capgemini.com/wp-content/uploads/2021/04/Supply-Chain-in-CPR_2021-03-10_Web-2.pdf.
3. Chopra, S. Meindl, P. (2012). *Supply chain management: strategy, planning, and operation*. Upper Saddle River, NJ, USA: Prentice Hall.
4. Christopher, M. (1998). *Logistics and supply chain management: Strategies for reducing costs and improving service*. Financial Times Prentice Hall.
5. DHL. *These 6 technologies will change logistics by 2030*. <https://ecommercenews.eu/dhl-6-technologies-will-change-logistics-2030/>.
6. Emmet, S. (2007). *The customer service toolkit*. Cirencester: Management Books 2000 Ltd.
7. European Union (2011). *European Communities, A Sustainable Future for Transport*.
8. Khanchanapong, T., Prajogo, D., Sohal, A.S., Cooper, B.K., Yeung, A.C.L., Cheng, T.C.E. (2014). The unique and complementary effects of manufacturing technologies and lean practices on manufacturing operational performance. *Int. J. Prod. Econ.*, 153, 191-203.
9. Krejci, C.C., Benita, M., Beamon, B.M. (2010). Environmentally-conscious supply chain design in support of food security. *Operations and Supply Chain Management*, 3, 14-29.
10. Lee, S., Kang, Y., Prabhu, V.V. (2016). Smart Logistics: Distributed Control of Green Crowdsourced Parcel Services. *Int. J. Prod. Res.*, 54(23), 6956-6968.
11. Ming-Lang, T., Shamimul, I., Noorliza, K., Firdaus, A.F., Samina, A. (2019). A literature review on green supply chain management: Trends and future challenges. *Resources, Conservation and Recycling*. Vol. 141, 145-162.
12. Roy, V., Schoenherr, T., Charan, P. (2018). The thematic landscape of literature in sustainable supply chain management (SSCM) A review of the principal facets in SSCM development. *Int. J. Oper. Prod. Manag.*, 38(4), 1091-1124.
13. Rungtusanatham, M., Salvador, F., Forza, C., Choi, T.Y. (2003). Supply-chain linkages and operational performance: a resource-based perspective. *International Journal of Operations and Production Management*, 23, 1084-1099.
14. Shahin, M., Chen, F.F., Bouzary, H. (2020). Integration of Lean practices and Industry 4.0 technologies: smart manufacturing for next-generation enterprises. *Int. J. Adv. Manuf. Technol.*, 107, 2927-2936.
15. Simchi-Levi, D. (2005). *Designing and managing the supply chain*. USA: McGraw-Hill College.

16. Surmacz, T., Wierzbński, B. (2019). The Importance of Intra-firm Relationships in Green Supply Chain Management—A Conceptual Framework. In: A. Kawa, A., Maryniak (eds.), *SMART Supply Network*. Cham: EcoProduction. Springer.
17. Wincewicz-Bosy, M., Łupicka A., Stawiarska E. (2017). *Współczesne wyzwania łańcuchów dostaw*. TEXTER.
18. Yazdanparast, A., Manuj, I., Swartz, S.M. (2010). Co-creating logistics value: A service-dominant logic perspective. *The International Journal of Logistics Management*, 21(3), 375-403.
19. Zhu, Q., Sarkis, J., Geng, Y. (2005). Green supply chain management in China: pressures, practices and performance. *Int. J. Operations Prod. Manag.*, 25, 449-468.

CITIES' ATTRACTIVENESS FACTORS FROM THE PERSPECTIVE OF DIGITAL NOMADS

Aleksandra SZTUK

Wroclaw University of Economics and Business, Faculty of Business and Management, Department of Marketing Research; aleksandra.sztuk@ue.wroc.pl, ORCID: 0000-0002-1845-0363

Purpose: This paper aims to identify the factors of destination attractiveness in the opinion of the digital nomads. The data was obtained through a quantitative research process.

Design/methodology/approach: The study uses a quantitative approach. The author used a method in the form of a diagnostic survey using a questionnaire tool with a proprietary scale provided to respondents on-line (CAWI). A deliberate sample selection was used based on the self-identification criterion of the respondent as a digital nomad with experience or planning a trip in this capacity soon.

Findings: In order to choose a city as a destination, digital nomads are most often guided by the price level prevailing in a given place, the level of safety, and the interesting culture and identity presented by the city. Among the factors influencing the city's attractiveness, the most important were the technological facilities, accessibility, the presence of recreational areas and facilities, and the local community's attitude towards visitors.

Originality/value: This paper focuses on analyzing the specificity and features of cities from the perspective of a relatively new, dynamically growing group of external recipients - digital nomads. The developed conclusions may contribute to formulating the city's marketing messages appropriately and adapting the city's offer to the digital nomad community. In addition, this paper contains the issue of preferences regarding the size of the city and the intention to use coworking spaces.

Keywords: digital nomads, place marketing, cities' attractiveness factors.

Category of the paper: Research paper.

1. Introduction

In recent years, along with the development of technologies and due to the pandemic, which has mainly resulted in digitizing many functions and workplaces, numerous visitors to cities are digital nomads (Orel, 2021). The term "digital nomad" was introduced in the late twentieth century to describe a vision of technological progress for human life and work (Makimoto, Manners, 1997). The authors then predicted how the development of mobile technologies

would affect human life, creating a lifestyle - not very common then - defined as "people freed from the constraints of time and location" (Makimoto, 2013, p. 40). A digital nomad can be defined as a fully mobile worker (usually intellectual) using digital technologies that enable work anytime and anywhere in the world (Liegl, 2014). The digital nomad's lifestyle is also characterized by a commitment to travel. Therefore, it is emphasized that it is not only a form of work but also the way it is organized and a generally understood lifestyle (Wang et al., 2018). At this point, a distinction should be made between the term "digital nomad," meaning a mobile worker carrying out work tasks from any and voluntarily chosen location in the world with the support of digital technology; and "digital nomadism" meaning the way of life led and developed by these traveling workers (Hannonen, 2020).

Digital nomads differ from remote workers residing in a permanent place of residence by the value attributed by nomads to gain new experiences through international travel. On the other hand, the main issue differentiating a digital nomad from a traditional tourist is that tourists most often travel as part of a vacation without needing to perform official duties during their stay. Additionally, a significant part of tourists is often unaware of the social situation of the visitor city. Most tourists also avoid direct integration and contact with local communities, which could potentially present the identity of a place to a much wider extent and show its unique features (Thompson, 2019). Digital nomads are more involved in exploring the whereabouts than traditional tourists. Thus, they engage in slow tourism to a much greater extent in their temporary stay (Putra, Agirachman, 2016). It is also worth emphasizing the difference between employees - immigrants, and digital nomads. The mobility of nomads motivates the search for new experiences, adventure, meaning, and discoveries rather than economic or political factors related to the work performed (O'Reilly, Benson, 2009). Some scientists classify digital nomads into three groups: time-flexible remote workers who do not travel, workers who frequently travel with permanent residence, and workers who travel without a permanent residence (Reichenberger, 2018). Non-traveling digital nomads, also city dwellers, often use public spaces or rented coworking spaces to do their work outside the apartment.

The digital nomad lifestyle is one of the fastest growing and most popular social trends. Over the next ten years, the estimated number of nomads will increase to one billion (Hatalaska, 2017). These changes create a chance for many territorial units to increase their competitive position. A city's competitiveness should be understood as the ability of a territorial unit to obtain the necessary resources, provide high-quality services, economic development, and attract and then retain customers (Ni, Kresl, 2014). The attractiveness of a city focuses on its resources and their presentation, while competitiveness refers to the positioning of the city through strategic management (Baron, Budziński, 2019). This means that when creating the attractiveness of a given city, local authorities should focus on selecting such features that, if properly configured and presented, will contribute to increasing interest in the city's offer.

Skillful use of marketing tools and promoting the city contribute to distinguishing a territorial unit and emphasizing its attractiveness and uniqueness. This serves to increase the demand for the offer of a given place, which in turn makes the city's competitive position more dynamic. In order to properly design an effective city's marketing communication, which will influence the perception of the city concerning the target group of digital nomads, it is necessary to recognize their needs and expectations. The choice of the location of the digital nomads is voluntary and inspired by the desire to explore the culture and resources of a given place. However, one of the critical aspects of presenting the city concerning this group is the distinguishing features of identity and the factors of attractiveness from their perspective, which require prior identification.

Due to the relatively new group of recipients of the city, which are digital nomads, and the lack of empirical research in this area, in particular those relating to territorial units, it is necessary to conduct research among this community to contribute to better recognition and definition of the lifestyle and their expectations towards the visited location. This study aims to identify the features and attributes of the city that make a given location attractive from the perspective of digital nomads. The conclusions drawn based on the collected data can be used to make possible changes in the image strategy of the city, better suited to the expectations of the group of digital nomads.

2. Theoretical background

The pace and type of changes occurring in the labour markets are mainly influenced by technological development, prevailing trends, and changes of a socio-cultural nature (Bendkowski, 2018). Among the contemporary social factors, the most common is the individual's motivation to pursue autonomy of action and the willingness to perform official duties flexibly, allowing for a harmonious combination of work and free time (Wittel, 2001). Globalization has also impacted the rapid increase in mobility among workers in recent years, taking up nomadism activities. Especially visible in the context of the simplicity and comfort of movement due to the development and high availability of the transport system. The work of digital nomads is not limited by socio-geographical factors, as they are characterized by freedom in choosing the place and time of work (Müller, 2016). Digital nomads choose a site as their location based on recreational, cognitive, cultural, and natural interests, not employment. The most frequently chosen destinations are exotic areas from the perspective of a digital nomad, which depends on the country of origin of a given person.

Coworking spaces appear more often in the offer of many cities, which is one of the components of the city's perceived image. The term coworking space can be understood as a form of work; work environment, or place of work; and as a service which is the rental of

appropriately adapted, shared rooms to carry out work (Bendkowski, 2018). Coworking spaces increase work efficiency and provide comfortable and high-quality equipment (including furniture, air conditioning, noise reduction, adequate lighting, vegetation, and high-speed Internet) (Howell, 2022). The character, appearance, and decoration of rooms proposed by individual developers, investors, or territorial units are influenced by the prevailing trends and the founder's visions. However, the functioning of offices should be based on the following assumptions related primarily to the prevailing atmosphere, constituting the idea of these spaces: collaboration, community, sustainability, openness, and accessibility (Schürmann, 2013). The use of coworking spaces by a given person lasts as long as it is comfortable while maintaining complete freedom of action (Spinuzzi, 2015). Therefore, using these spaces does not require long-term lease obligations from the users (Chevtaeva, 2021).

The growing trend and the essence of the occurrence and its impact on various areas of activity of countries, cities, and communities hosting digital nomads is confirmed by the constantly increasing number of published scientific research related to this phenomenon. The increase in research related to digital nomadism is focused mainly on describing and verifying the lifestyle and activities undertaken among digital nomads using empirical research. However, in the context of the theoretical approach to digital nomadism, there are still gaps and inaccuracies (Wang et al., 2018). This may be due to the relative novelty of the phenomenon, in particular, its mass occurrence in recent years. In one of the few scientific publications referring to the factors of choosing the destination of digital nomads, based on in-depth interviews, the aspects determining the choice of a specific city were distinguished (Lhakard, 2022):

- social (safety, access to health services, communicative, educated people, low crime rate, protection of human rights),
- cultural capital (local culture, tradition),
- environmental (including tourist and natural resources, attractions, weather, pollution, public spaces),
- city management (the honesty of the authorities, transparency of activities and policies, committed community).

The conducted research analysis and conclusions drawn should aim at developing universal, as far as possible, city management principles in acquiring and hosting digital nomads, with particular emphasis on the benefits for local communities (Wey, 2019). When verifying the factors for a given location, the implications should focus on development and strong promotion of cities, as they constitute a source of attraction and income that should not only be maintained but also increased (Gandini, 2016). The group of digital nomads can be classified as temporary residents, short-term business employees (as they are primarily freelancers), and tourists. At the same time, these are the three main groups of recipients of territorial marketing activities in almost every city. These are the groups that the city's strategy should focus on in terms of improving its attractiveness (Ashworth, Voogd, 1990). The analysis of

elementary requirements of the city shows that the inhabitants expect a clean and safe environment and the availability of services, business representatives pay attention to the quality of accommodation and the labour market, and tourists to accessibility, ease of movement, and exciting culture (Berg, Meer, 1999). By identifying and understanding the needs, desires, and behaviour of particular target groups, local authorities can influence the perception of a location as attractive from the perspective of a given group. Based on systematically collected data in this area, the authorities should implement specific changes in the functioning and external communication of the city, which would increase its attractiveness (Sinkien, Kromalcas, 2010). Actions aimed at increasing the city's attractiveness will deliver the intended effects in the form of, for example, increased demand for the city's offer, only thanks to long-term, systematic, and appropriately targeted efforts. For the image of the city to be an attractive and, at the same time, authentic reflection of its identity, local authorities should use and emphasize the current features of the city that make the place unique (distinguishing features of identity) (Glińska, 2012).

3. Research methodology and results

In order to identify the factors of destination attractiveness in the opinion of the digital nomads, a quantitative study was carried out using the diagnostic survey method. The CAWI (Computer-Assisted Web Interview) technique was used, the main advantages of which are safe collection and relatively quick data analysis among a broad international community. The survey was developed using a tool: a Google Forms questionnaire with a custom-designed scale containing a total of eleven questions. The elements of the study were digital nomads who took, are going, or plan to undertake a journey in this capacity soon. The questions included in the questionnaire in English were shared several times in online groups and thematic forums, along with the characteristics of the respondent (digital nomad, adult) and a description of the purpose of the study. The groups and internet forums selected by the author bring together the community of digital nomads and are used to exchange views, opinions, experiences, and insights on destinations. The research material was collected from the beginning of July till the end of August 2022, and an Excel spreadsheet was used to analyze the collected data.

A total of 209 respondents participated in the study, 128 of whom (61.2%) were freelancers. Four age groups were specified: 18-25 (18); 26-35 (100); 36-45 (67); 46 years and more (24). The vast majority of the respondents had higher education – a bachelor's degree (61.7%), a master's degree (29.2%) and 18 persons (8.6%) completed education in high school, and one of the respondents had a Ph.D. degree.

The introduction to the listing of the main factors of the city's attractiveness was the verification of whether there were specific preferences of digital nomads regarding the size of the city of destination. Cities of different sizes (using the population criterion¹) present a different specificity, mainly in management style, including the number and type of investments, social structure, and broadly understood the urban offer. The respondents were offered the possibility to choose one of the four basic sizes of the city. The possibility of selecting the answer "it does not matter" was proposed in the suggested responses. The percentage distribution of respondents' answers is presented below (figure 1).

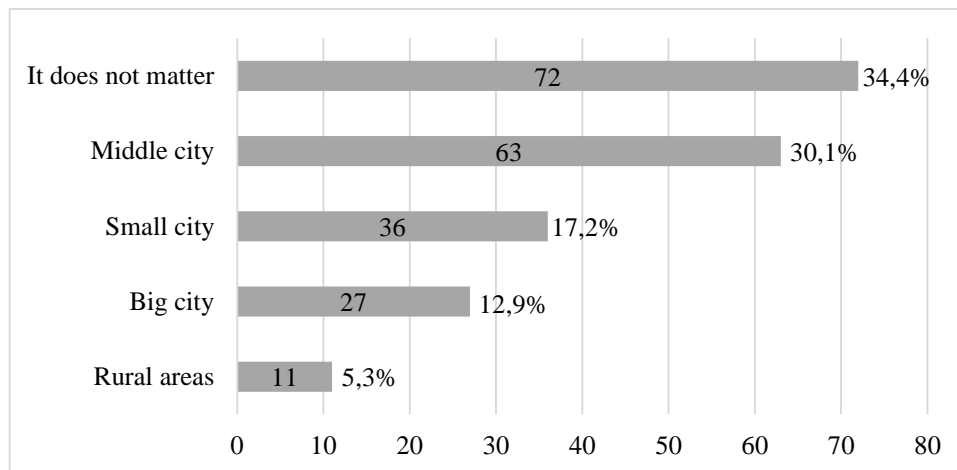


Figure 1. Destination city size preferred by digital nomads in 2022.

Source: Own elaboration based on the analysis of the survey results.

The analysis of the answers shows that among the surveyed digital nomads, there are no strong preferences regarding the size of the chosen destination. The highest percentage of the answers (34.4%) indicated the lack of importance of the city's size in terms of population. The second most frequent answer was a middle-sized city, usually characterized by a complete offer in terms of services and products. An interesting result may be that most respondents would choose a small city rather than a big one, and the least frequently indicated of the proposed answers were rural areas (5.3%).

The second question was related to the most important factors regarding a given location that affect its choice. 11 primary responses were suggested, relating to the prices of accommodation, the popularity of the place, the city's offer, accessibility, and the prevailing culture and local community. The list of suggested answers was developed independently, distinguishing economic, social, communication and tourist factors, including selected factors from the survey conducted among foreign tourists (Krzyżanowska, Wilczewska, 2018). Due to the insufficiently recognized empirically and theoretically problem and to better identify the factors constituting a choice given location by digital nomads, the respondents were allowed to

¹ The population criteria were presented to the respondents in the content of the suggested answers. The population criteria used in the study to distinguish the size of territorial units are accepted and used in the scientific literature and by the United Nations.

provide their own answers. The chart below shows the percentage distribution of the suggested answers (figure 2).

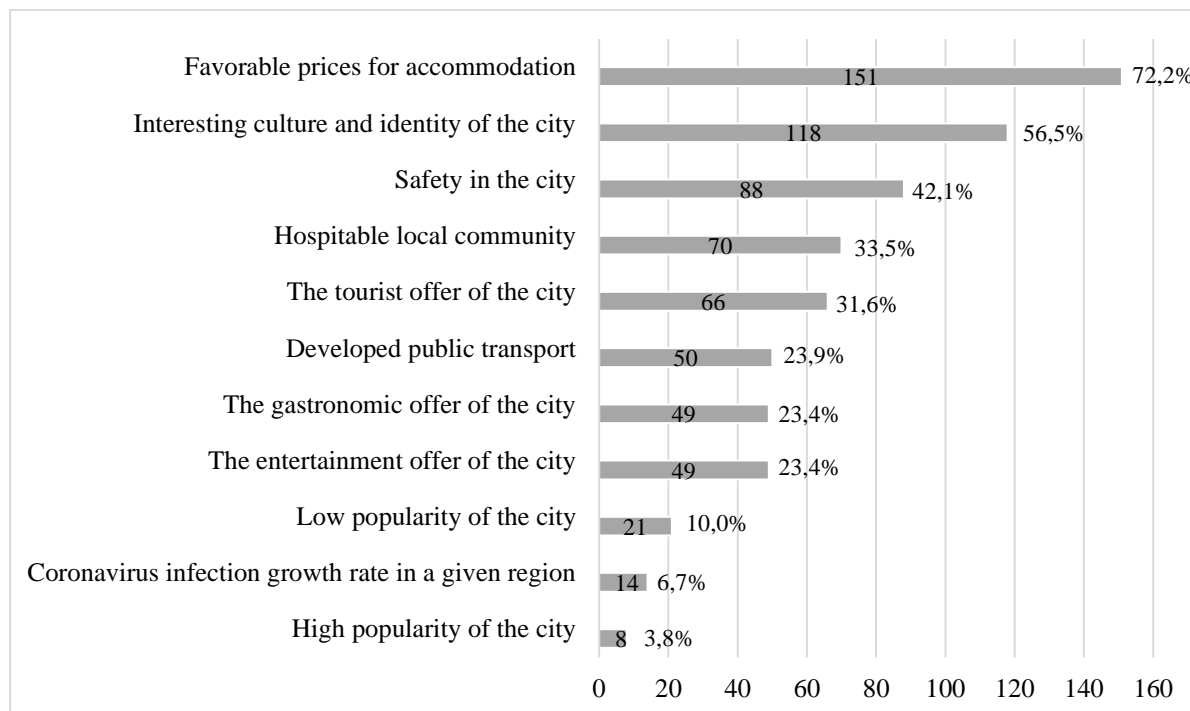


Figure 2. The importance of selected factors for digital nomads in choosing a destination in 2022.

Source: Own elaboration based on the analysis of the survey results².

The most critical factor, indicated by over $\frac{3}{4}$ of the respondents, was the favorable accommodation prices offered in a given location. This factor was significantly high, regardless of the preferences regarding the size of the destination. Another important factor, indicated by more than half of the respondents, was the city's interesting culture and identity, which is indeed strongly related to the lifestyle of digital nomads and the search for experience and authenticity of a place in the visited cities. Safety in the destination area was also often indicated (42, 1%), closely related to the low crime rate. Among *own* answers about factors determining the choice of a given destination, the respondents most often indicated: the proximity of the city to natural areas and the possibility of close sightseeing, and weather factors - moderate climate (warm, but not stuffy and no extreme heat).

In the following question, respondents were asked to indicate, according to their personal preferences, 1-3 factors that make a given city *attractive* in the context of a digital nomad's stay. Among the analyzed responses, the most frequent ones in the following order were: weather, technological facilities - Internet speed; costs of general maintenance, cleanliness of the city, safety, proximity, readability of the city and road communication, availability of areas for sports (gyms, running and cycling routes), the attitude of the local community towards tourists and visitors (open and hospitable, welcoming, tolerant, involved in place); and interesting architecture. Among the less frequent or individual responses, there were such aspects as: low

² The answer percentage does not add up to 100 because the question allowed multiple answers.

air pollution, official language, diversity of the place, leisure opportunities, number of events, low number of tourists and predominance of local communities, and warm or seaside climate.

Then, the respondents were asked about the travel or planned mode of travel in the context of trip participants as a potential variable in the preferences of city characteristics and use. The following answers were proposed in a closed question: alone, with a friend/partner, or with a family member(s). The vast majority of the surveyed nomads (58.4%) travel alone, 36.8% with a friend or partner, and only 4.8% with a family member(s).

Then, the respondents were asked whether they would use coworking spaces in the place of destination to perform their official duties. The question was closed and contained three possible answers: yes, no, and maybe. The highest percentage of the surveyed nomads (46.4%) consider using the coworking space, and nearly $\frac{1}{3}$ of the respondents (32.5%) declare that they use coworking spaces while in the destination. When analyzing the results, it was verified whether the travel mode in the context of the trip participants impacts the use of coworking offices. The largest disproportions were noted between people traveling with a partner and alone (figure 3).

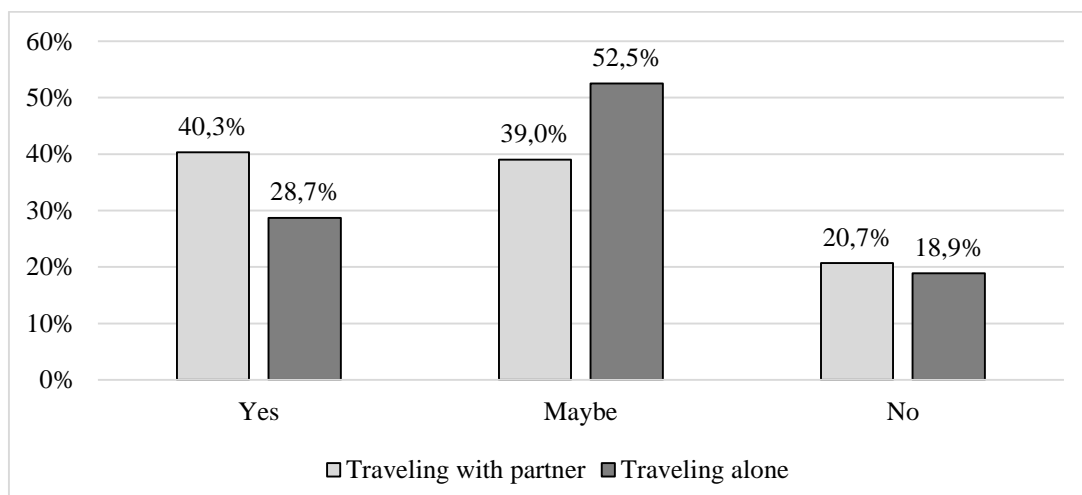


Figure 3. Willingness to use coworking spaces by digital nomads in the destination in 2022.

Source: Own elaboration based on the analysis of the survey results.

Based on the analysis of the responses, it was also noticed that people who intend to use coworking spaces to a greater extent choose large (17.6%) and medium-sized (33.8%) cities and almost five times less often choose the rural areas as a destination compared to the overall sample of respondents. The analysis of significant preferences related to the use of coworking spaces was not noticed between freelancers and people employed by the company, and the percentage distribution of responses was similar.

Then, attempts were made to identify the most frequently used sources of information by digital nomads on the choice of destination, which is critical for cities that distribute their marketing offer. Four responses were suggested, and the possibility of giving their own answer, also the question allowed for multiple choice. The most frequently given answers among the respondents were online thematic groups (75.6%) and official websites of cities, where the offer

and characteristics of individual territorial units are presented (48.3%). Then, information obtained from friends and/or family (37.3%) was indicated. The least frequently chosen responses from the one proposed by the researcher were books, catalogs, and guides (5.7%). In self-provided responses, the respondents also mentioned social media such as Facebook, Instagram, YouTube, Google, and Wikipedia, travel blogs, and information from residents of a given destination. The variable that has the most substantial impact on the sources of obtaining information is the age of digital nomads. The highest disproportions were observed between digital nomads aged 26-35 and people 46 years old and more, which is shown in the figure 4. below:

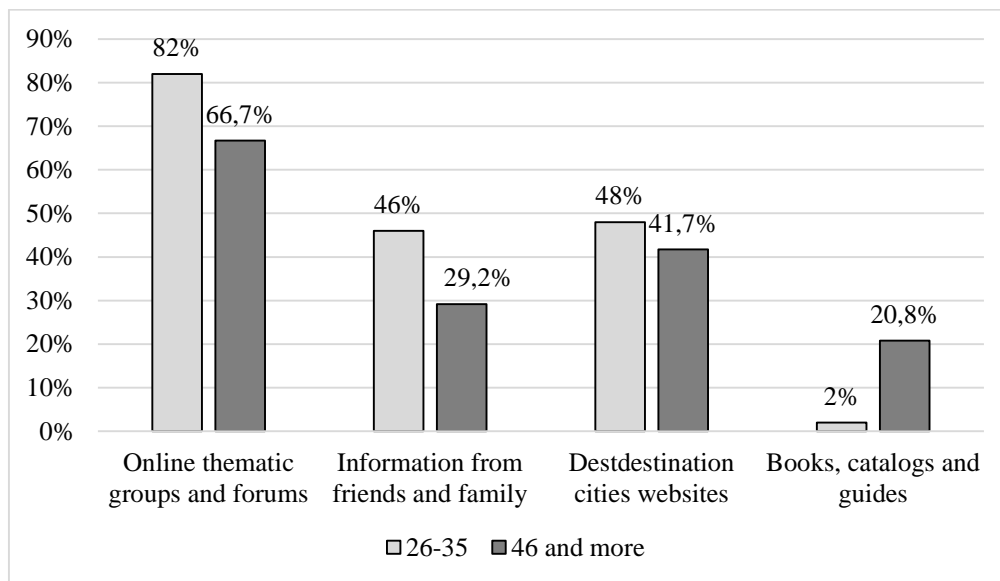


Figure 4. The most frequently chosen sources of obtaining information on destinations, indicated by digital nomads in 2022.

Source: Own elaboration based on the analysis of the survey results³.

The largest percentage of the surveyed digital nomads (82%) using internet forums are people aged 26-35, and those who use catalogs and guides on specific cities are people over 46 years old. Information obtained from the websites of the cities of destination in each group had similar values (between 40% and 50%).

4. Conclusions

Based on the analysis of the results of the quantitative study, it was confirmed that such aspects as safety, interesting and preserved local culture and tradition, an adequately developed communication system and diverse infrastructure of the city, the presence of places enabling the implementation of activities have a high impact on the choice of location by digital nomads

³ The answer percentage does not add up to 100 because the question allowed multiple answers.

(Lhakard, 2022). Moreover, the basis for choosing a given location is the cost of living and accommodation. This result is consistent with the study on the factors determining the choice of destination conducted among traditional tourists traveling abroad (Krzyżanowska, Wilczewska, 2018). Based on the most critical factors determining the choice of a given destination by digital nomads, it was also confirmed that they have preferences that fit within the requirements of three groups of city recipients: residents, tourists, and business workers.

The specificity, features and resources of a territorial unit are influenced by the size of the city, most often expressed by the population criterion. In smaller territorial units, due to the generally lower rate of migration, tighter social ties, and lower degree of anonymity, visitors can experience a greater degree of preserved authenticity and cultural identity. These are the main aspects sought by people who practice slow tourism, which characterizes the travel aspect of the lifestyle of digital nomads. On the other hand, rural areas differ significantly from units with urban rights in terms of resources and sensitivity to any changes occurring in them (Rauhut Kompaniets, Rauhut, 2016). This may limit the offer and the package of amenities for nomads and may be the reason for the reluctance of the surveyed group to choose this type of destination. An important variable influencing the choice of the city size is the intention to use coworking spaces, which is associated with a more extensive and diverse offer characteristic of big territorial units.

Among the identified, most often indicated by the digital nomads factors making a given city an attractive choice, were developed technological facilities and shared facilities in this context. The basis is access to a fast internet connection. Digital nomads do not necessarily have to use coworking spaces or accommodations to perform their duties, but also public places, e.g., cafes, that offer WiFi access (Fuchs, Sandoval, 2014). Some countries deliberately use amenities that facilitate and increase the presence of digital nomads by offering a convenient system for the registration process of cell phones (Lhakard, 2022). Another critical factor is the city's legibility and ease of movement, which can be influenced by the managers of territorial units by appropriate design of the city identification system relating to the city's topography, coherent, legible, and common signs of streets and buildings. A group of digital nomads may also be attracted by the aspect related to the possibilities of spending free time actively (parks, green areas, running and cycling routes, recreational facilities), which, based on the research, turned out to have a high impact on the attractiveness of a given location. A significant factor from the digital nomad's perspective is also the attitude and behavior of the local community. There is a consensus among city marketing researchers that residents play a critical role in promoting the city's offer as local experts with high credibility (Choi, Fu, 2018). Deliberate inclusion and encouraging residents to participate in promoting the city's image and offer, although it is still underestimated, has a critical impact on the feelings of visitors during their stay and may contribute to the increase in demand to a greater extent than through the offer presented in traditional marketing materials. Also, due to the need and desire of nomads to explore different cultures, the inhabitants' attitude is essential as they are the primary group

presenting the identity and authenticity of a given place. This is mainly due to informal contacts and oral communication with external groups (Casais, Monteiro, 2019). Therefore their openness and kindness are of particular importance in this context. The involvement and support of the local community in the city's policy results from the consent and acceptance of top-down management goals. Therefore, local authorities should present to residents the benefits of hosting a group of digital nomads and plan activities aimed at increasing their share in the consumption of the city's offer.

An important result of the analysis of the conducted research is the determination of the sources of obtaining information on destinations most often used by digital nomads. Knowledge of information transmission channels allows city managers to adjust better the method and type of content delivery to a selected target group. However, nowadays, due to high competition and the speed of information dissemination, cities have limited control over the sources of their formation (Berne et al., 2011). Almost every second respondent, regardless of belonging to a given age group, uses the information posted on the official websites of territorial units, which are designed and published following the strategy of a given city. Cities that want to acquire a group of digital nomads should use the communication tool of their website for this purpose in a conscious way, including information on the benefits of selecting a territorial unit from the perspective of digital nomads.

5. Future research directions

This study was conducted among the international community of digital nomads. In subsequent studies on the analysis of preferences and factors determining the choice of a specific location, the researcher proposes to distinguish the studied groups according to, f.e., the continent of origin, which may indicate different and diverse requirements in searching for and discovering new cultures and interpreting the exoticism of departure and factors determining the attractiveness of the city.

In order to support the practical use of research by territorial units, it is required to in-depth analyzes related to the acquisition of information by digital nomads about the city. For this purpose, subsequent studies should identify what information related to the functioning and work in the city is most often sought by digital nomads, which may contribute to adjusting the city's offer and then presenting it to the target audience through appropriate channels.

An important aspect is a parallel research among the local community regarding, among other things, expectations or fears related to the stay of a relatively new group of visitors - digital nomads, which have emerged in recent years. Awareness of the attitude of the residents will allow managers to pursue a sustainable city policy, respecting the interests of external and internal groups.

References

1. Ashworth, G.J., Voogd, H. (1990). *Selling the City*. London: Belhaven Press.
2. Baron, M., Budziński, M. (2019). Atrakcyjność i konkurencyjność miast – podejście typologiczne. *Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju PAN, Vol. 273*, pp. 122-132.
3. Bendkowski, J. (2018). Coworking – nowa forma pracy w gospodarce cyfrowej. *Zeszyty naukowe politechniki śląskiej. Organizacja i zarządzanie, Vol. 124*, pp. 19-32.
4. Berg, L. van den, Meer, J. van der, Otgar, A.H.J. (1999). *The Attractive City. European Institute for Comparative Urban Research (EURICUR)*. Erasmus Universiteit Rotterdam.
5. Berne, C., Garcia-Gonzalez, M., Mugica, J. (2011). How ICT shifts the power balance of tourism distribution channels. *Tourism Management, Vol. 33(1)*, pp. 205-214.
6. Casais, B., Monteiro, P. (2019). Residents' involvement in city brand co-creation and their perceptions of city brand identity: A case study in Porto. *Place Branding and Public Diplomacy, Vol. 15*, pp. 229-237.
7. Chevtaeva, E. (2021). Coworking and coliving: The attraction for digital nomad tourists. In: W. Wörndl, C. Koo, J.L. Stienmetz (Eds.), *Information and Communication Technologies in Tourism* (pp. 202-209). Cham: Springer.
8. Choi, S., Fu, X. (2018). Hosting friends and family as a sojourner in a tourism destination. *Tourism Management, Vol. 67(5)*, pp. 47-58.
9. Fuchs, C., Sandoval, M. (2014). Digital workers of the world unite! A framework for critically theorising and analysing digital labour. Triple C: Communication, Capitalism & Critique. *Open Access Journal for a Global Sustainable Information Society, Vol. 2(2)*, pp. 486-563.
10. Gandini, A. (2016). *The reputation economy: Understanding knowledge work in a digital society*. London: Springer.
11. Glińska, E. (2012). Wyróżniki tożsamości miast podlaskich w opinii ich lokalnych liderów. *Problemy Zarządzania, Finansów i Marketingu, Vol. 23*, pp. 267-284.
12. Hannonen, O. (2020). In search of a digital nomad: defining the phenomenon. *Information Technology & Tourism, Vol. 22*, pp. 335-353.
13. Hatałska, N. (2017). *Wędrowcy, Raport o współczesnych nomadach*. Available online: https://hatałska.com/wp-content/uploads/2017/02/Wedrowcy_RaportOWspolczesnychNomadach.pdf, 30.06.2021.
14. Howell, T. (2022). Coworking spaces: An overview and research agenda. *Research Policy, Vol. 51(2)*, 104447.
15. Krzyżanowska, K., Wilczewska, K. (2018). Turystyczne wyjazdy zagraniczne w opinii ich uczestników. *Journal of Tourism and Regional Development, Vol. 9*, pp. 45-54.

16. Lhakard, P. (2022). Destination City for Digital Nomad's in Thailand: A Case Study of Digital Nomad Community in Chiang Mai. *Journal of Humanities and Social Sciences Studies, Vol. 4(1)*, pp. 178-188.
17. Liegl, M. (2014). Nomadicity and the care of place on the aesthetic and affective organization of space in freelance creative work. *Computer Supported Cooperative Work, Vol. 23*, pp. 163-183.
18. Makimoto, T. (2013). The age of digital nomad - impacts of CMOS innovation. *IEEE Solid State Circuits Magazine, Vol. 5(1)*, pp. 40-47.
19. Makimoto, T., Manners, D. (1997). *Digital nomad*. Chichester: Wiley.
20. Müller, A. (2016). The digital nomad: Buzzword or research category? *Transnational Social Review, Vol. 6(3)*, pp. 344-348.
21. Ni, P., Kresl P.K. (2014). *Global Urban Competitiveness Report (2011–2012). City: Who Can Overcome the Financial Tsunami*. Beijing: Center for City and Competitiveness (CASS).
22. O'Reilly, K., Benson, M. (2009). Lifestyle migration: escaping to the good life? In: M. Benson, K. O'Reilly (Eds.), *Lifestyle migrations: expectations, aspirations and experiences* (pp. 1-13). London: Ashgate.
23. Orel, M. (2021). Life is better in flip flops. Digital nomads and their transformational travels to Thailand. *International Journal of Culture, Tourism and Hospitality Research, Vol. 15(1)*, pp. 3-9.
24. Putra, G.B., Agirachman, F.A. (2016). *Urban coworking space: Creative tourism in digital nomads perspective*. 4-5 August. Arte-Polis 6 International Conference. Bandung, Indonesia, PGN.
25. Rauhut Kompaniets, O., Rauhut, D. (2016). Why Urban and Rural Place Marketing Strategies Differ: A Theoretical Discussion. *Romanian Journal of Regional Science, Romanian Regional Science Association, Vol. 10(1)*, pp. 23-42.
26. Reichenberger, I. (2018). Digital nomads - a quest for holistic freedom in work and leisure. *Annals of Leisure Research, Vol. 21(1)*, pp. 364-380.
27. Schürmann, M. (2013). *Coworking Space. Geschäftsmodell für Entrepreneur und Wissensarbeiter*. Wiesbaden: Springer Fachmedien.
28. Sinkienė, J., Kromalcas, S. (2010). Concept, Directions and Practice of City Attractiveness Improvement. *Public Policy and Administration, Vol. 31(1)*, pp. 147-154.
29. Spinuzzi, C. (2015). *All Edge. Inside the New Workplace Networks*. Chicago-London: The University of Chicago Press.
30. Thompson, B.Y. (2019). The Digital Nomad Lifestyle: (Remote) Work/Leisure Balance, Privilege, and Constructed Community. *International Journal of the Sociology of Leisure, Vol. 2*, pp. 27-42.

31. Wang, B., Schlagwein, D., Cecez-Kecmanovic, D., Cahalane, M. (2018). *Digital work and high-tech wanderers: three theoretical framings and a research agenda for digital nomadism*. Australian Conference on Information Systems.
32. Wey, W.M. (2019). Constructing urban dynamic transportation planning strategies for improving quality of life and urban sustainability under emerging growth management principles. *Sustainable Cities and Society*, Vol. 44, pp. 275-290.
33. Wittel, A. (2001). Toward a Network Sociality. *Theory, Culture & Society*, Vol. 18(6), pp. 51-76.

INFLUENCE OF ETHNOCENTRIC ATTITUDES TOWARDS TEQUILA ATTRIBUTES RELATED TO COUNTRY OF ORIGIN EFFECT

Andrzej SZYMKOWIAK^{1*}, Robert ROMANOWSKI², Jakub ŁACH³

¹ Poznan University of Economics and Business (PUEB); andrzej.szymkowiak@ue.poznan.pl,
ORCID: 0000-0001-5673-7093

² Poznan University of Economics and Business (PUEB); robert.romanowski@ue.poznan.pl,
ORCID: 0000-0002-8585-6806

³ SKN Marketing, Poznan University of Economics and Business (PUEB); lach.jak99@gmail.com,
ORCID: 0009-0002-9278-0093

* Correspondence author

Purpose: The aim of the article is to determine the impact of ethnocentrism on the assessment of product attributes in consumer purchase decision-making. The reason for undertaking the work was interest in the topic of ethnocentrism and determining the impact of product attributes unrelated to functionality on consumer preferences.

Design/methodology/approach: In order to achieve the objective, a questionnaire was conducted using the Internet survey method (CAWI) on a sample of 650 respondents from the USA. Respondents were asked to choose the tequila that looked the same in the photos, in relation to which 6 attributes of the product's country of origin were changed: (raw) materials, place of production, nationality of the company employees and owner, company headquarters and country to which taxes are paid. The use of the conjoint method made it possible to determine the significance of factors when assessing the origin of the product. Moreover, to determine ethnocentric attitude, respondents were asked to answer 20 questions on a modified CET scale.

Findings: The most significant product attribute associated with the country of origin was the place of production, followed by the place of paying taxes and the source of (raw) materials. The least important attribute was the origin of the employees. However, differences in the assessment regarding the attributes of the country of origin were determined with regard to the level of ethnocentrism represented by the respondents. For highly ethnocentric consumers, the most important attribute was where the tequila company paid its taxes. On the other hand, for consumers demonstrating a low level of ethnocentrism, the place of production was the most significant.

Research limitations/implications: The study was conducted among US citizens, which means that it would be worth conducting such a study on other continents, especially in countries with a high consumption of alcoholic products. The conducted empirical study, its results and methodology, may be inspiration for further scientific research in the analysed field. Due to the range and complexity of the studied issues as well as the research area, this work does not fully exhaust such an extensive subject. In further research, the respondents should represent different age groups, as well as levels of education and ethnocentrism.

Consumers could also be distinguished by the number of people in the household and their annual household income.

Practical implications: The publication can be used by both owners and marketing departments of companies producing alcohol, but also other products with a diffuse country of origin effect. The information contained in the research could be applied in shaping campaigns among clients with different levels of ethnocentrism.

Originality/value: In the article, a comprehensive description has been given of the potential for displaying various product attributes related to the country of origin, important from the point of view of consumers' decisions about different levels of ethnocentrism. What may be considered innovative is the analysis, ranking attributes concerning the country of origin depending on the level of consumer ethnocentrism.

Keywords: county of origin effect, consumer ethnocentrism, conjoint analysis, modified CETSCALE.

Category of the paper: Research paper.

1. Introduction

The topic of etocentricism has been discussed by numerous authors (Sumner, 1906; Shimp, Sharma, 1987; Herche, 1992; Balabanis, Diamantopoulos, 2004, 2008, 2011; Figiel, 2004; Chryssochoidis, Krystallis, Perreas, 2007; Evanschitzky, Wangenheim, Woisetschläger, Blut, 2008; Renko, Karanovic, Matic, 2012; Szromnik, Wolanin-Jarosz, 2013; Romanowski, 2013; Kaczmarek, Wieja, 2021 and others) since the beginning of the 20th century. In the literature, the issue of attitudes towards “ours” and “foreign” has been highlighted (Sumner, 1906; Balabanis, Diamantopoulos, 2004; Barani, Maison, 2014 and others), various scales for measuring the level of ethnocentrism have been proposed (Shimp, Sharma, 1987; Szromnik, Wolanin-Jarosz, 2013; Rašković et al., 2017; Ma et al., 2019), and dimensions as well as forms of economic patriotism have been defined (Cliff, Woll, 2012; Kaczmarek, Wieja, 2021), describing the importance of ethnocentrism in creating social capital (Romanowski, 2013; Jokiel, Jokiel, Młodzinska-Granek, 2022).

In the field of research on the country of origin effect associated with ethnocentrism, occurring in relation to various aspects of the production process (Insch, McBride, 1998; Chao, 1993), various product groups have been studied (Ahmed, d'Astous, 2008 - in the area of the fashion market, Kaczmarek, Wieja, 2021 - in the area of food products and others). However, there are no studies in which various attributes of alcoholic products would be analysed in relation to country of origin effect.

The reason for undertaking this research was interest in the topic of ethnocentrism and learning about the impact of product attributes that are not related to their functionality on consumer preferences. An attempt was made to identify the importance of various product attributes in the process of making a purchase decision. In addition, it was attempted to answer

the question as to why consumers prefer one product over another, when the products are almost identical in functionality, but differ in attributes related to country of origin.

The aim of the work was to determine the influence of ethnocentric attitude on the assessment of product attributes when making decisions about purchasing tequila by consumers. To achieve this objective, an online survey method was used, in which questions were asked to interpret data using the CET scale and conjoint analysis.

2. Correlations between consumer ethnocentrism and the country of origin effect - a literature review

The term ethnocentrism was first used in 1906 by the American sociologist and anthropologist William Graham Sumner in "Folkways: A Study of Mores, Manners, Customs and Morals", and has been described as "a way of looking at things where one's own group is the centre of everything and everything around is evaluated and prioritised in regarding it. Each group feeds on its pride and vanity, glorifies its superiority, exalts its own gods, and looks down on others" [transl. A.S.] (1906).

Another important publication in the field of consumer ethnocentrism was presented by Shimp and Sharma (1987, pp. 280-289). These authors claimed that consumer ethnocentrism is "a belief shared by consumers about the obligation and morality of buying goods of domestic origin". The authors stated that consumer ethnocentrism is a feeling that makes consumer decisions not be guided by economic rationality, but by morality and a sense of duty. The ethnocentric attitude of consumers is related to decisions regarding choices, purchases and the use of products of domestic origin. Ethnocentric customers are guided by the criterion of product origin and prefer those coming from a native source. According to the authors, for ethnocentric consumers, buying foreign products is a moral problem, not an economic one. Proponents of this approach suggest that it is moral reasons that make ethnocentric consumers buy domestic products, despite the fact that their quality may be lower and the price higher than imported ones (Szromnik, Wolanin-Jarosz, 2013, p. 99). Unlike them, for non-ethnocentric consumers, the country of origin is irrelevant, and they are guided by economic rationality in their purchasing decisions.

Herche (1992) showed that consumer ethnocentrism predicts consumer preferences to buy domestic rather than foreign goods and, at the same time, proved that ethnocentric tendencies are better predictors of purchasing behaviour than demographic or marketing variables. In many other studies it has been demonstrated that consumer ethnocentrism influences attitudes or purchase intentions towards domestic and foreign products (Balabanis, Diamantopoulos, 2004; Chrysochoidis, Krystallis, Perreas, 2007; Evanschitzky, Wangenheim, Woisetschläger, Blut, 2008; Renko, Karanovic, Matic, 2012).

Among contemporary researchers, one can find a different point of view according to Shimp and Sharma regarding the motives that guide ethnocentric consumers. Baran and Maison (2014) argued that consumer ethnocentrism does not have to be a phenomenon conscious of the consumer with an ideological background. The authors stated that consumer ethnocentrism is not necessarily a phenomenon that should be analysed within the context of morality and obligations that guide the consumer. According to Baran and Maison (2014), the rationality of decision-making by ethnocentric consumers is modified by the influence of factors that have their source in the automatic mechanism associated with favouring one's own group. They assumed that one of the basic mechanisms explaining the operation of this phenomenon is the mechanism of preferring one's own group while depreciating others. This means that a product produced in one's own country is automatically more "domestic" and less "foreign", so it is automatically perceived better by native consumers. At the same time, the operation of this mechanism can be moderated by the reflective processing of information. When decision-making processes are more conscious, depending on the circumstances - the effect of favouring the products of one's own group can be strengthened, weakened or abolished. It may also happen that a rational analysis will lead to the recognition of the objective advantage of third-party products. In their works, the authors postulated that the phenomenon of consumer ethnocentrism does not have to result from a strong sense of duty and obligation (Baran, Maison, 2014, p. 5). Similar perspectives were also expressed by other authors (Kaczmarek, Wieja, 2021). This thread is often associated with consumer attitudes expected during crises.

Over the years, crises have led many companies to collapse, while others have developed and become strengthened on the market. Sometimes, the key factor was the product itself, while sometimes, the marketing narrative and image of the company. In the article entitled "Revision of consumer ethnocentrism" by Siamagka and Balabanis (2015), the authors discussed the 2008 crisis, during which the scale and power of ethnocentrism were revealed. The government, organisations and companies of all kinds use ethnocentrism to minimise the import and access of foreign competitors to the local market. In many countries, governments have chosen to sponsor "buy-local campaigns" to protect jobs, reduce import, improve trade and protect national identities. Examples of such activities have occurred, for example, in the United States, Australia, Indonesia and Vietnam. Multinationals were hit hard by these campaigns, so they decided to create their own "buy local" programmes, such as WalMart in the US and John Lewis in the UK. In previous research from the early 2000s, it has been shown that consumers do not associate the origin of brands, even if they are international and well-known companies. An example can be the study conducted in the United States in 2005 by the team: Samiee, Shimp and Sharma. They indicated that the average rate of correct brand identification is only 49% for 40 domestic brands and 22% for 44 brands from 7 other countries. In subsequent studies in which the correct assignment of the country of origin to the brand was checked, the results ranged from 17% to 54%, depending on the product category. Such research was carried out in Australia by Hennebichler (2007).

Ethnocentric attitudes of consumers prompted producers and people responsible for creating marketing narratives to properly adapt product attributes to the emerging phenomenon. Assigning various attributes of a product, or more broadly, an offer, to a place is called the Country-of-Origin effect (COO or made-in effect). The country of origin effect defines the impact of the product origin and the image of the country in which it was produced or with which it is associated, and how this influences consumers' decisions (Figiel, 2004). Proper determination of the country of origin is the basic condition for the conscious purchase of domestic or foreign products by consumers. When making decisions, consumers adhere to the use of specific identifiers (Szromnik, Wolanin-Jarosz, 2013). In such a division, the main identifier is information about the country of origin concerning the product brand, which makes it possible, with high probability, to indicate the country of origin of the product itself. One of such identifiers is a brand symbol - a specific graphic sign.

Research on the impact of COO on brand equity is limited (Samiee, 2010; Zeugner-Roth, Diamantopoulos, 2010) and in only a few studies was it examined how COO dimensions relate to different dimensions of brand equity, or how these relationships may change under the influence of other variables. In research on the subject, it has been suggested that breaking down COO into dimensions allows for a more complete understanding of how COO affects brand equity (Ahmed, D'Astous, 2008; Chao, 1993; Fetscherin, Toncar, 2010; Hamzaoui, Merunka, 2007; Thakor, Lavack, 2003). Consumers often know both where the brand comes from and where the product is made (Ahmed, d'Astous, 2008). For example, Nike is known in the United States, but factories that produce Nike running shoes are located in Asian countries such as China, Pakistan and Vietnam. As illustrated by this example, consumer perceptions of information on country of origin may differ from the reality. The perceived origin of a brand or country of production may vary from consumer to consumer and may differ from actual locations. In the study by Hamzaoui-Essoussi, Merunka and Bartikowski, the authors used a quasi-experimental method to account for these differences. Consumers can derive the meaning of the Nike brand from both its American origin and the Asian country of manufacturing. Brand Origin (BO - Brand Origin) is "the place, region or country to which the brand is perceived as belonging to by its target customers" [transl. A.S.] (Thakor, Kohli, 1996), i.e. the country from which the brand appears to originate, which reflects the "brand nationality". Country of Manufacture (COM) is the country (or region) that consumers believe produces a branded product. While BO exists in the minds of consumers and is a strong association with the brand (Keller, 1993), COM is factual information that can change in time and space. Therefore, BO and COM can affect brand equity differently. In their research, Mort and Duncan (2003) found that for Australian consumers, the "owned by" indication is slightly more important than the "made in" indication, which also shows varying consumer preferences.

The emergence of hybrid, bi- and multi-national products has made it necessary to reconsider the COO concept. In this context, various authors have redefined the COO and divided the country of origin into a number of sub-dimensions or sub-categories with regard to material products, such as: Country of Parts (COP), Country of Assembly (COA), Country of Design (COD), Country of Manufacture (COM) and Country of Brand (COB) (Chao, 1993; Insch, McBride, 1998; Hulland, 1999).

Originally, COO referred, on the one hand, to the country where the product was designed, and on the other, to the country where it was designed or manufactured. In the past, many companies that originated from one country designed and manufactured their products in their own country. Therefore, the country of origin was that where the product was designed and where it was finally assembled, i.e. the country that appeared on the "made-in" label. Given the fact that in recent decades the process of globalisation has led companies to relocate production to other countries, one product may have components manufactured in several countries, while the final assembly may take place in yet another country altogether. As such, there are currently several COO concepts that represent different product manufacturing situations in a larger number of countries:

- Country of Manufacture (COM) refers to the country where the product is manufactured up to the final stage, i.e. the country where the final product is received. It can be considered as the country where the final packaging takes place and where the final product is labelled (Insch, McBride, 1998).
- Country of Components (CPC) refers to the country where only parts of the product are produced. These may be components that are to be connected in the final product. This distinction is made especially in the case of products with a higher degree of technical complexity, where the role of individual components in the quality of the final product is perceived as high. Cars and computers are good examples of this. Many multinational companies, especially those whose production involves labour-intensive processes, outsource their components to decrease costs. When product components are outsourced to save costs, it is usually done in developing countries where labour costs are lower than in developed countries. This relocation process may have impact on the image of the final product. Therefore, the CPC is also taken into account by the consumer when evaluating products (Chao, 1993).
- Country of Assembly (COA) refers to the country where the product was assembled, taking into account that the parts were manufactured in other countries. This can be a country where the various parts are assembled, or a country where the product is partially or fully assembled and not necessarily always ready for sale to the final consumer (Insch, McBride, 1998).

- Country of Design (COD) means the country where the product is designed and developed (Nebenzahl, Jaffe, Kavak, 2001).
- Country of Brand (COB) is the country that consumers usually associate with a particular product or brand, regardless of where it was actually produced. According to consumers, this is the country to which the product belongs (Thakor, Kohli, 1996). On the other hand, Hulland (1999) believes that COB should be determined for each brand by specifying the country of origin of the companies that own the brand. In the literature, there is not agreement as to how different concepts should be defined, as many different descriptions are given.
- Country of Origin (COO) can be defined as "the country where the product or brand company is headquartered, which may also be inferred from the country where assembly or production takes place and the country where the product is designed" [transl. A.S.] (Ahmed, d' Astus, 1996).
- Country of (raw) materials; in a study from 2013 (Hustvedt, Carroll, Bernard), it was shown that Americans are willing to pay much more for a product if it is made of American rather than foreign raw materials. The higher the level of ethnocentrism in the respondent, the more s/he is willing to pay for this product. For respondents with a high level of ethnocentrism, the highest value for local products has been demonstrated (originating from the state in which they live).
- Country of employee origin; a variable taken from the CETSCALE, where the country of origin of the product is related to the origin of employees, and thus, if we buy a product from our country, we give employment to our compatriots. In various studies, this factor is more or less significant, but it always affects at least some consumers.
- Country of paying taxes; consumers influence companies to pursue a responsible corporate tax strategy (responsible CTS). In Johnson & Johnson's (2011) Corporate Social Responsibility (CSR) report, the company states: "We must be good citizens - support good works and charities and pay our fair share of taxes" [transl. A.S.]. When companies do not clearly state what tax policy they apply, the media come to the aid of consumers, trying to dispel doubts and expose the truth.

An additional factor is the policy that can very quickly negatively or positively influence consumer perception of a product. An example may be the deterioration of Russia's image by starting a war in the Ukraine or the improvement of the image of Poland. This country was considered anti-immigration before the war, but gained recognition in the eyes of the world public opinion by admitting over 8 million Ukrainian refugees and welcoming about 2 million Ukrainians into their homes.

3. Research methodology

As part of the work, an empirical study was carried out to check the impact of product attributes on the perception of the product as "made in the USA". In the first part of this chapter, the research methodology, characteristics of the respondents and graphic elements of the survey are presented. In the second part, the results obtained from the study are given, while in the third part, an analysis of the obtained results is conducted.

The questionnaire was conducted in the form of an online survey (CAWI) on March 9-20, 2022. The survey was sent out by ConsumerLab, operating at the Department of Commerce and Marketing at the Poznań University of Economics and Business, and the respondents were people living in the United States.

The form consisted of a set of questions that included combinations of product features, enabling the use of conjoint analysis. Due to this, it was possible to decompose the meaning of attributes related to the product, producer and production that have the greatest impact on the perception of the product's country of origin. The attributes in this study were: raw materials, place of production, employees, nationality of the owner, company headquarters and the country to which taxes are paid.

The study was designed to test the significance of tequila attributes related to the country of origin by assigning appropriate attributes to Mexico or the United States. Tequila is a Mexican spirit made from fermented agave juice. This product is mainly consumed in the United States (114 million litres per year) and Mexico (93 million litres per year). The combination of these two countries in one study is interesting because the nominal attribution of tequila production to Mexico was confronted with the ethnocentric attitudes of Americans, who consume the greatest amounts of tequila in the world. For comparison, the third country in terms of tequila consumption is Russia, with only 3.7 million litres in 2014. Tequila was selected for the study because, in addition to the popularity of the drink in both countries, it combines the ability to choose attributes for a potential producer. Thanks to this approach, each attribute can come from both countries and is a rational choice from a business point of view.

The entire study consisted of three parts. In the first one, there were 8 images. The questions related to the images were displayed beneath each one. Subsequent images were displayed in sequential mode (Figure 1).

The figure shows two examples of questionnaire forms for a tequila product. Each form lists six attributes with flags indicating country of origin and includes a 9-point Likert scale for perception and purchase intent.

Example 1 (Top):

- Raw materials - from USA
- Manufacturing - in Mexico
- Employers - from Mexico
- Owner nationality - from USA
- Headquoter - in Mexico
- Paying taxes - in USA

Based on the above information, indicate on the scale how you perceive the product.

Mexican 1 2 3 4 5 6 7 8 9 American

Would you like to buy this product?

strongly disagree 1 2 3 4 5 6 7 8 9 strongly agree

Example 2 (Bottom):

- Raw materials - from Mexico
- Manufacturing - in USA
- Employers - from Mexico
- Owner nationality - from USA
- Headquoter - in USA
- Paying taxes - in USA

Based on the above information, indicate on the scale how you perceive the product.

Mexican 1 2 3 4 5 6 7 8 9 USA

Would you like to buy this product?

strongly disagree 1 2 3 4 5 6 7 8 9 strongly agree

Figure 1. Selected examples of forms of asking questions in the questionnaire.

Source: own research.

Each image contained a different combination of country of origin variables (US or Mexican - 2 variables) and 6 product and manufacturer attributes (materials, production, employees, owner, location and taxes). The set for each respondent was identical - the same images with the same flags shown in the same order. The second part of the questionnaire included questions about ethnocentrism and questions related to alcohol consumption (Table 1).

In the questions concerning ethnocentric attitude, the 9-point Likert scale was used. Among the questions, there were 3 checking the attention of the respondent (ACQ), which consisted in selecting a specific answer specified in the question.

Table 1.*Set of questions regarding ethnocentric attitudes of the respondents – CET*

CET variable	Statement number	Statement content	Source
Customer Ethnocentrism (CET)	CET1	Purchasing foreign-made products is anti-American.	Rašković et al., 2017
	CET2	It is not right to purchase foreign-made products because it puts American people out of jobs.	
	CET3	A real American should always buy American products.	
	CET4	We should purchase products manufactured in the USA instead of letting other countries get rich from us.	
	CET5	Americans should not buy foreign products because this hurts American business and causes unemployment.	
	CET6	It may cost me in the long-run, but I prefer to buy American-made products.	
	CET7	American consumers who purchase products made in other countries are responsible for putting their fellow American people out of work.	
	CET8	We should buy from foreign countries only those products which we cannot obtain within our own country.	
	CET9	I love products and services from the USA.	Ma et al., 2019
	CET10	I am proud of products and services from the USA.	
	CET11	I admire products and services from the USA.	
	CET12	I feel attached to products and services from the USA.	
	CET13	East or West, the products and services from the USA are the best.	
	CET14	Products from the USA are examples of best workmanship.	
	CET15	Service providers from the USA have the best work attitudes.	
	CET16	For me, it's always the products from the USA first, last and foremost.	
	CET17	If I have a choice, I would prefer buying products and services from the USA.	
	CET18	I prefer being served by service providers from the USA.	
	CET19	If only possible, I avoid buying products and services from foreign countries.	
	CET20	I often refuse to buy a product or service because it is from a foreign country.	

Source: own research based on Rašković et al., 2017 and Ma et al., 2019.

After completing the above questions, a transition to part 3 occurred, in which there were metric questions. The study involved 650 people between the age of 19 and 75, and all of them successfully passed the ACQ. The mean age was 38.86 years ($SD = 11.57$). This group consisted of 321 men and 324 women, while 5 people did not wish to specify their gender. The vast majority of respondents had higher education - they constituted a total group of 516 people (79.38%), of which the majority had a bachelor's degree, as many as 399 people (61.38%), then 111 people (17.08%) had a master's degree, while only 6 of the respondents (0.92%) completed their doctorate. The third, largest group was represented by people with a secondary school certificate or equivalent, and there were 110 in total (16.92%). The last 2 groups were respondents with education lower than secondary or simply a different form of education. The number of people from these groups was 4 (0.62%) and 20 people (3.08%), respectively.

4. Findings

The subjects were divided into high (HIGH) and low ethnocentric (LOW) groups. The group with a high level of ethnocentrism included 348 people, of whom 193 were men and 155 were women. The group with a low level of ethnocentrism included 128 men, 169 women and 5 people who did not specify their gender. The HIGH group had a 31 higher average age (39.2 years) than the LOW group, with an average age of 38.46 years. The difference is very small, but in this case, there is a principle that people become more concerned with the origin of the product with age and prefer domestic rather than foreign ones. The results of ethnocentric orientations in relation to income are also very interesting (Table 2).

Table 2.

Division of respondents according to annual household income in dollars broken down into the HIGH and LOW group

Income in dollars	Percentage in group		Difference
	HIGH	LOW	
< 19,999	4.31	12.58	-8.27
20,000-29,999	11.21	8.61	2.60
30,000-39,999	8.05	11.26	-3.21
40,000-49,999	15.80	12.25	3.55
50,000-59,999	24.14	15.56	8.58
60,000-69,999	7.76	7.62	0.14
70,000-79,999	11.21	7.28	3.92
80,000-89,999	5.46	5.96	-0.50
90,000+	12.07	18.87	-6.81

Source: own research.

The HIGH group definitely outweighed the LOW group within the \$50,000-\$59,999 range. However, when we move towards people with the lowest income (range < 19,999) or the highest (range 90,000+), the LOW group constitutes an increasingly large group. Analysing these results, it can be said that a low level of ethnocentrism is observed in the group of people with the lowest and the highest annual household income. On the other hand, people with an average annual household income (\$50,000-\$59,999) are likely to be highly ethnocentric.

The data appears quite intriguing if we divide it into 3 income ranges: 0-39,999, 40,000-69,999 and 70,000+. In this case, the HIGH group was divided as follows: 23.56% in the lowest income group and, respectively, 47.70%, 28.74% in the middle and high income bracket. In turn, the LOW group is very evenly distributed in each of the ranges, and the results were 32.45%, 35.43% and 32.12% from the lowest to the highest range. This arrangement shows that almost half of the HIGH group is middle class, and the LOW group is represented more or less equally by each class.

Although in the LOW group there are more people in the highest income brackets, they do not describe their financial situation as very good. Only 15 people (4.97% LOW) marked the answer "very good financial situation", while in the HIGH group, the same answer was chosen

by 34 respondents (9.77% HIGH). In the 90,000+ income range, there were 57 people in the LOW group (18.87% of this group) and 42 people in the HIGH group (12.07% of this group). Most often, among highly ethnocentric respondents, a good financial situation was indicated (over 50% of this group). In the LOW group, the answer “average” was most often chosen (almost 50% of this group). In the HIGH group, as part of other assessments of their financial situation, the following were indicated: average - 31.61%, bad - 2.30% and very bad - 0.86%. In the LOW group, 33.77% of people described their financial situation as good, 8.61% as bad and 5.63% as very bad.

The division into 2 groups representing a high and a low level of ethnocentrism allowed for a better reflection of the differences in the perception of various attributes concerning country of origin in relation to the tested product, in this case - tequila (Figure 2).

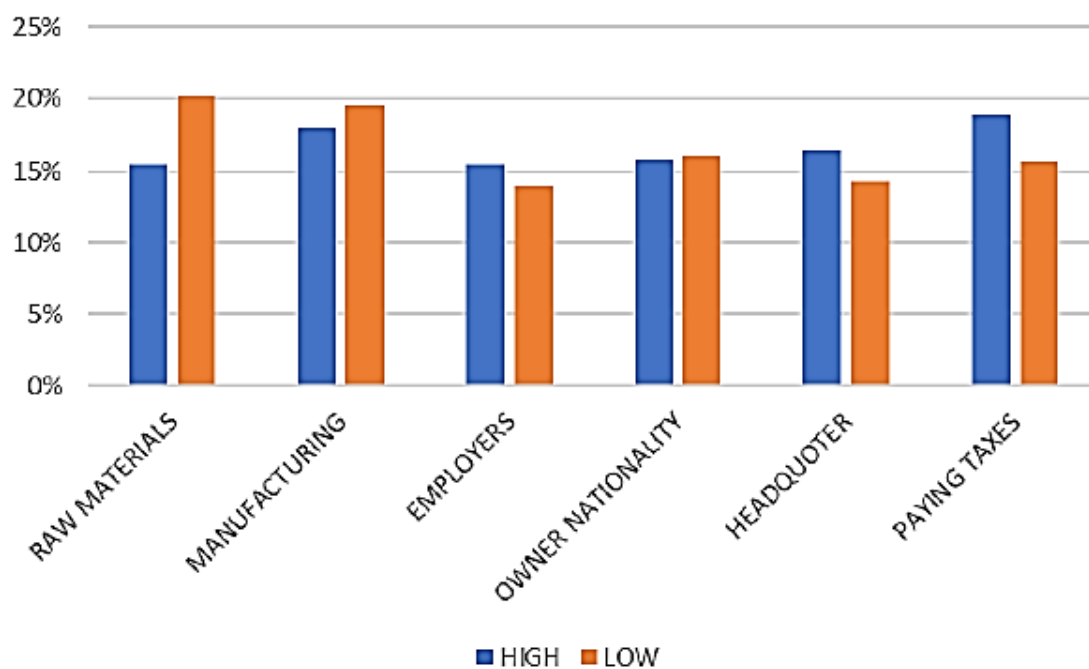


Figure 2. Influence of product attributes on the perception of a product as "made in the USA", divided into LOW-ethnocentric and HIGH-ethnocentric groups.

Source: own research.

The figure reflects the differences in the preferences of the 2 groups. For the HIGH group, the country of tax payment by the company is the most important (18.5%) and the country of production is slightly less important (18%). For people from the LOW group, the country of production is also very significant (19%), but the origin of the materials is the most important (20%). Both groups are the least concerned about the background of employees (16% and 14% respectively, see Table 3).

Table 3.

Ranking of tequila attributes associated with the country of origin effect among consumers with high and low levels of ethnocentrism

Attribute	HIGH		LOW		Total	
	%	rank	%	rank	%	rank
Raw materials	15.5	5.	20	1.	17.75	2.
Manufacturing	18	2.	19	2.	18.5	1.
Employees	15.5	5.	14	6.	14.75	6.
Owner nationality	16	4.	16.5	3.	16.25	4.
Headquarters	16.5	3.	14.5	5.	15.5	5.
Tax residence	18.5	1.	16	4.	17.25	3.
Total	100		100		100	

Source: own research.

With regard the nationality of the owner, both groups are practically in agreement. It is also worth noting that the spreads in the two groups are slightly different. In the LOW group, the spread between the most and least important attribute of the product's country of origin is over 6 percentage points. In the case of the HIGH group, the difference between the extreme attributes is almost twice smaller - 3 percentage points. In addition, the origin of materials and raw materials for production for the LOW group is the most important, while for the HIGH group it is the opposite, because the origin of materials is classified at the very end in the hierarchy of significance among all attributes.

5. Discussion and conclusions

The aim of the work was to determine the impact of ethnocentrism on the assessment of product attributes in consumers' purchasing decisions. In the conducted study, tequila was selected for measurement, for which 6 attributes of the country of origin were altered, assigning them to either the USA or Mexico. The study covered mainly Americans and tried to check to what extent the information about the American origin of tequila can affect the change in the tendency towards its purchase, with the respondents' level of ethnocentrism differing.

The analysis allowed to show that there are relationships between low and high levels of ethnocentrism and various attributes of the country of origin assigned to the product. In the case of both groups, there are different assessments of the importance of the same attributes. Thanks to such information, producers and traders can prepare detailed marketing campaigns aimed at such target groups.

A characteristic feature of the HIGH group is a large share of the middle-class. If a given enterprise pursues a friendly tax policy and pays taxes locally, this fact should be clearly communicated to consumers with a high degree of ethnocentrism. A significant factor for both groups turned out to be the location of production, which ranked second in the hierarchy of significance in both groups. This information allows to suggest that it is worth emphasizing

where the product was produced, because it is a very important factor for the consumer. This should be communicated to, for example, Americans if the product is manufactured in the United States. If the product is manufactured in a country other than the country of consumers' residence, it is not advisable to display such information. For people with a high degree of ethnocentrism, it is better to show the place of tax payment if it is the country of origin of the consumer. However, in the case of people with a low degree of ethnocentrism, it is better to demonstrate the source of the raw materials. It is also advisable to emphasize not only individual benefits resulting from the purchase of a given product, but also activities supporting a given country.

However, the study is not without some research limitations. The first is the fact that the survey was conducted among respondents living in the United States. This limits the transfer of research results to the entire population or to the customs of other nationalities. The relationship between the United States and Mexico, which is very politically conditioned, cannot be overlooked either. Differences in the level of development of both countries may create varying attitudes of customers towards products manufactured in a more developed country than towards products manufactured in a less developed country.

The conducted empirical study, its results and methodology may be an inspiration for further scientific research in the analysed area. Due to the range and complexity of the issues and the field of study, the subject has not been fully exhausted in this work. It would be worth examining consumers from other countries, especially the Polish society, to check the extent to which the attributes of product origin are of importance. It is recommended that the respondents represent different age groups, as well as level of education and ethnocentrism. Consumers can also be distinguished by the number of people in the household and their annual household income.

References

1. Ahmed, S.A., d'Astous, A. (1996). Country-of-origin and brand effects: a multi-dimensional and multi-attribute study. *Journal of International Consumer Marketing*, 9(2), 93-115.
2. Ahmed, S. A., d'Astous, A. (2008). Antecedents, moderators and dimensions of country-of-origin evaluations. *International Marketing Review*.
3. Balabanis, Diamantopoulos (2011). Gains and Losses from the Misperception of Brand Origin: The Role of Brand Strength and Country-of-Origin Image. *Journal of International Marketing*, 19(2).
4. Balabanis, G., Diamantopoulos, A. (2008), Brand Origin Identification by Consumers: A Classification Perspective. *Journal of International Marketing*, 16(1), 39-71.

5. Balabanis, G., Diamantopoulos, A., (2004). Domestic country bias, country-of origin effects, and consumer ethnocentrism: A multidimensional unfolding approach. *Journal of the Academy of Marketing Science*, 32(1), 80-95.
6. Baran, T., Maison, D. (2014). Dobrze bo (nie)polskie? O uwarunkowaniach i konsekwencjach etnocentryzmu konsumenckiego [Eng. Good Because (Non-)Polish? On the Determinants and Consequences of Consumer Ethnocentrism]. *Marketing i Rynek*, No. 10.
7. Bernard, J.C., Hustvedt, G., Carroll, K.A. (2013). What is a label worth? Defining the alternatives to organic for US wool producers. *Journal of Fashion Marketing and Management: An International Journal*.
8. Chao, P. (1993). Partitioning country of origin effects: consumer evaluations of a hybrid product. *Journal of international business studies*, 24, 291-306.
9. Chryssochoidis, G., Krystallis, A., Perreas, P. (2007). Ethnocentric beliefs and country-of-origin (COO) effect: impact of country, product and product attributes on Greek consumers' evaluation of food products. *European Journal of Marketing*, 41(11/12), 1518-1544.
10. Evanschitzky, H., Wangenheim, v. F., Woisetschläger, D., Blut, M. (2008), Consumer ethnocentrism in the German market. *International Marketing Review*, 25(1), 7-32.
11. Fetscherin, M., Toncar, M. (2010). The effects of the country of brand and the country of manufacturing of automobiles: An experimental study of consumers' brand personality perceptions. *International Marketing Review*.
12. Figiel, A. (2004). *Etnocentryzm konsumencki. Produkty krajowe czy zagraniczne* [Eng. Consumer Ethnocentrism. Domestic or Foreign Products]. Warsaw: PWE.
13. Hamzaoui Essoussi, L., Merunka, D. (2007). Consumers' product evaluations in emerging markets: does country of design, country of manufacture, or brand image matter? *International Marketing Review*, 24(4), 409-426.
14. Hennebichler, P. (2007). *County [sic] of Origin Knowledge: Insights Into Consumers' Knowledge*. VDM Publishing.
15. Herche, J. (1992). A note on the predictive validity of the CETSCALE. *Journal of the Academy of Marketing Science*, Vol. 20.
16. Hulland, J.S. (1999). The effects of country-of-brand and brand name on product evaluation and consideration: A cross-country comparison. *Journal of International Consumer Marketing*, 11(1), 23-40.
17. Insch, G.S., McBride, J.B. (1998). Decomposing the Country-of-Origin Construct: An Empirical Test of Country of Design, Country of Parts, and Country of Assembly. *Journal of International Consumer Marketing*, 10(4), 69-91.
18. Johnson & Johnson (2011). 2011 Responsibility Report. https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/j/NYSE_JNJ_2011.pdf, 20 Nov. 2022.

19. Jokieli, M., Jokieli, G., Młodzinska-Granek, A. (2022). *Role Of Social Capital In Shaping Partnerships Within Interorganizational Networks*.
20. Kaczmarek, M., Wieja, M. (2021). *Patriotyzm konsumencki Polaków* [Eng. The Consumer Patriotism of Poles] Co. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego.
21. Keller, K.L. (1993). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, 57(January), 1-22.
22. Ma, Q., Abdeljelil, H.M.M., Hu, L. (2019). The influence of the consumer ethnocentrism and cultural familiarity on brand preference: evidence of event-related potential (ERP). *Frontiers in Human Neuroscience*, 13, 220.
23. Mort, G.S., Duncan, M. (2003). "Owned by...": Country of Origin's New Cue. *Journal of International Consumer Marketing*, 15(3), 49-69.
24. Nebenzahl, I.D., Jaffe, E.D., Kavak, B. (2001). Consumers' punishment and rewarding process via purchasing behavior. *Teaching Business Ethics*, 5(3), 283-305.
25. Rašković, M., Ding, Z., Hirose, M., Žabkar, V., Fam, K.S. (2020). Segmenting young-adult consumers in East Asia and Central and Eastern Europe – The role of consumer ethnocentrism and decision-making styles. *Journal of Business Research*, 108, 496-507.
26. Renko, N., Karanovic, B.C., Matic, M. (2012). Influence of consumer ethnocentrism on purchase intentions: Case of Croatia. *Economic Thought and Practice*, 2, 529-544.
27. Romanowski (2013). Znaczenie etnocentryzmu konsumenckiego w tworzeniu gospodarczego kapitału społecznego w Polsce [Eng. The Significance of Consumer Ethnocentrism in Creating Social Economic Capital]. *Handel Wewnętrzny*, 1, 67-73.
28. Samiee, S. (2010). Advancing the country image construct—A commentary essay. *Journal of Business Research*, 63(4), 442-445.
29. Samiee, S., Shimp, T.A., Sharma, S. (2005). Brand origin recognition accuracy: its antecedents and consumers' cognitive limitations. *Journal of international Business studies*, 36, 379-397.
30. Shimp, Sharma (1987). *Consumer Ethnocentrism: Construction and Validation of the CETSCALE*.
31. Siamagka, Balabanis (2015). Revisiting Consumer Ethnocentrism: Review, Reconceptualization, and Empirical Testing. *Journal of International Marketing*, 23(3).
32. Sumner (1906). *Folkways: A Study of Mores, Manners, Customs and Morals*. Boston: Ginn and Company.
33. Szromnik (1998). Etnocentryzm konsumencki - istota i uwarunkowania rozwoju [Eng. Consumer Ethnocentrism – Essence and Determinants of Development].
34. Szromnik, A., Wolanin-Jarosz, E. (2013). Diagnoza poziomu etnocentryzmu konsumenckiego Polaków z wykorzystaniem metody CETSCALE [Eng. Diagnosing the Level of Consumer Ethnocentrism Among Poles Using the CETSCALE Method], *Konsumpcja i Rozwój*, 1(4), 98-111.

35. Thakor, M.V., Lavack, A.M. (2003). Effect of perceived brand origin associations on consumer perceptions of quality. *Journal of Product & Brand Management*, 12(6), 394-407.
36. Thakor, M.V., Kohli, Ch.S. (1996). Brand Origin: Conceptualization and Review. *Journal of Consumer Marketing*, 13(3), 27-42.
37. Zeugner-Roth, K.P., Diamantopoulos, A. (2010). Advancing the country image construct: Reply to Samiee's (2009) commentary. *Journal of Business Research*, 63(4), 446-449.

MARKETING COMMUNICATION OF MODERN ENTERPRISES IN THE ERA OF DIGITAL ECONOMY

Jolanta TARAPATA

Military University of Technology in Warsaw, Faculty of Security, Logistics and Management, Institute of Organization and Management; jolanta.tarapata@wat.edu.pl, ORCID: 0000-0002-0783-6295

Purpose: The purpose of the study is to present the digital nature of the marketing communications of companies located in Poland by determining the digital-based activities they undertake in their marketing communications with stakeholders. The study assumes that the digital nature of their marketing communications is determined by their business profile, form of ownership, ownership capital and the number of employees they employ.

Design/methodology/approach: The survey was conducted on a sample of 225 enterprises in July-September 2020 throughout Poland (16 provinces). The sample selection was stratified and random. The method used in the study was a diagnostic survey.

Findings: The survey results show that a sizable percentage of companies located in Poland have some catching up to do in basic digital functions in the area of stakeholder communication. On the other hand, enterprises using digital solutions in marketing communications boast a fair amount of diversity in them, making the integration of digital instruments and solutions a feature. The undertaking of selected marketing activities by organizations is determined by various attributes of the organization, i.e. business profile, form of ownership, especially their size and ownership capital.

Research limitations/implications: The results of the survey call for a broader and more in-depth analysis of the digital activity of modern enterprises in the area of marketing communications. This includes, first and foremost, learning about the determinants of the deficiencies manifested by a sizable percentage of companies in this area, which would make it possible, perhaps, to remove the barriers to these companies becoming more digital in the area of communication with stakeholders.

Practical implications: The results of the research prove that among the surveyed attributes of organizations, it is the form of ownership and size of the enterprise that most differentiates them in terms of the digital solutions used in marketing communications. Sole proprietorships are less likely to use such solutions than partnerships and limited liability companies, and companies employing between 10 and 49 people are less likely to use such solutions than medium-sized and large companies. They are the ones that should accelerate the implementation of digital solutions in marketing activities first. This would require building a management culture conducive to change and based on an understanding of the role of new technologies, which are now becoming a guarantor of their success.

Social implications: Better understanding of the business impact of digital marketing tools.

Originality/value: The article is primarily of cognitive value, emphasizing the importance of digital solutions used in marketing communications by modern companies. Consequently, it can be an element that stimulates the management of modern organizations to seek and apply marketing instruments using the latest digital solutions to reach specific groups of stakeholders.

Keywords: marketing communications, digital economy, digital technologies in marketing communications.

Category of the paper: research paper.

1. Introduction

The digital economy permeates many aspects of modern life, including retail, transportation, education and agriculture and modern technologies are being used in all sectors of the economy, both in the business environment and in households and government operations, benefiting both businesses and their stakeholders (customers, consumers, professional partners, etc.).

In most of the definitions identified in the literature, the digital economy is defined through the use of new technologies and platforms, i.e. mobile networks and devices, wireless networks and sensor networks, Internet of Things and Internet of Everything, cloud-based applications and services (cloud computing), Big Data Analytics and Big-Data-as-a-Service, automation and robotization, multi-channel and omnichannel distribution models for products and services, social networks, or by the more general term "digital technologies" (Gudanowska, Kononiuk, 2020, pp. 21; Bukht, Heeks, 2017, pp. 4-6; Pieriegud, 2016, p. 11). "Digital technologies based on computer hardware, software and networks are no longer a novelty, but are becoming increasingly sophisticated, integrated and, as a result, transforming societies as well as the global economy" (Schwab, 2018, p. 23). This aspect is also pointed out by C. Dahlman, S. Mealy, M. Wermelinger, (2016) arguing that the digital economy is rooted in digital technologies, information networks and the activities that people perform through these networks. Thus, it is an economy in which transactions are carried out electronically through the Internet, resulting from billions of online connections, being a combination of digital technologies and people's actions (Śledziwska, Włoch, 2020, p. 78). The aforementioned technological solutions play an important role in creating the effective functioning of modern organizations by providing them with flexibility and increasing the mobility of their operations. They are not insignificant in the planning and creation of effective marketing communications, and the investment of enterprises in its digitization is becoming a necessity for them and a condition for them to remain on the market and develop.

The purpose of the study is to determine the activities based on digital solutions undertaken in marketing communications by enterprises located in Poland. The study assumes that the digital nature of marketing communications of modern enterprises is determined by their business profile, form of ownership, ownership capital and the number of employees employed in them. The selection of variables was based on factual considerations. In making the selection of variables an effort was made to include variables representing different sides of the company's business and treated simultaneously in marketing research theory, as basic and standard variables considered in enterprise research.

2. Digital aspects of enterprise marketing communications

Marketing communication is a specific process of interaction and dialogue between an enterprise and its target market (Wiktor, 2013, p. 14), it is "a process of information flow leading to audience engagement" (Gregor, Kaczorowska-Spychalska, 2016, p. 31). Marketing communication is also the formation of an enterprise's distinguishing features, i.e. its identity, as well as its appropriate partner response to the information flowing from the environment (Perenc, 2013, p. 471).

The rapid development in recent years of new technologies, including the Internet, as well as the increase in the popularity and scope of the use of mobile devices by consumers results in the transfer of marketing communication activities of enterprises to the virtual world, creates opportunities for enterprises to conduct individualized dialogue-based activities in the so-called "virtual space", allowing them to quickly and easily access feedback (Szymański, 2016, p. 98). This communication, known as mobile communication, is carried out using the resources of the global computer network, new media tools, including mainly the Internet. It focuses on transmitting integrated and interactive messages through them from organizations to their stakeholders (Gracz, 2016, p. 167) and uses dialogue, which is the basis of relationship marketing. Interactive marketing communication tools with buyers make it possible to involve them in a specific game with the producer and/or seller of specific goods (Wiechoczek, 2011, p. 503), to ensure the flow of information between companies, intermediaries and consumers, as well as within the company (Szymański, 2016, p. 98), and to make it possible to obtain important information from consumers, such as ideas for product innovations or promotional messages, as well as to evoke in them a sense of appreciation by these entities.

These tools include Internet tools used in the online channel, such as websites, newsletters, blogs, display ads, chat rooms, online forums, social media and others. The primary interactive tools of online communication are websites, i.e. company websites. Through them, users can learn not only about the attributes of products and the benefits they are supposed to provide to

buyers, but also report problems they encountered while browsing it, send their comments and opinions on the company's products and suggestions for improvement. Of the aforementioned online tools, it is social media (Facebook, Twitter) that most enable companies and brands to have an interactive dialogue with the market environment. Interacting means both transmitting information externally and receiving and analyzing information from the environment (Zbrzyzny, 2011, p. 52). The goals for which companies or brands have a social media presence are most often to build a community around the brand, increase brand awareness, increase website traffic, increase sales, manage brand reputation and identify customer needs (Całka, 2015, p. 330).

Assuming that customer relationships are becoming the most important resources for an organization, these assets must be actively managed to maximize the organization's added value (Billewicz, Olszak, Bartuś, 2015, p. 179). Customer relationship management is now strictly determined by the use of information technologies and tools to monitor, establish, maintain and manage customer relationships. These include advanced marketing automation systems (*Marketing Automation*), tools such as CRM, ERP, or AI.

Marketing automation systems make it possible to integrate and synchronize the processes taking place in marketing and sales departments, accurately assess their effectiveness, and streamline marketing and sales processes (Rutkowski, 2020, p. 4). Covering a potential customer with an automated marketing action involves directing a series of tailored marketing, information or sales messages to such a person, the purpose of which is to: maintain contact with the potential customer, convey key ideas to the potential customer, indicate the best moment to sell. Examples of marketing messages can be automatic welcome messages sent by the marketing automation system to an identified customer after his/her visit to the company's website, which allow to immediately identify the potential customer's area of interest and equip him/her with knowledge about the company's activities and/or its product offerings, or cyclical programs (Drip programs) consisting of creating sets of information sent at specific intervals to particular customer groups (Błażewicz, 2012).

Customer relationship management is also enabled by CRM (Customer Relationship Management) systems. This term refers to a company's ability to acquire customers, get to know them, renew contacts with them, make sure that the company provides them with exactly what they expect and what it has committed to, and finally - realize profits through these activities (Power, 2003). This is made possible by the operational, analytical and interactive subsystems working together within CRM (Billewicz, Olszak, Bartuś, 2015, p. 180). Operational CRM functions in the area of customer data collection, supports business processes within marketing, sales and marketing service, among others, by: - marketing automation: market segmentation, campaign management and event-based marketing, - sales automation: opportunity management, contact management, product configuration, - service automation: contact and call-center operations, web service. Analytical CRM analyzes customer data structures, thus discovering unknown information about customers, allowing business analysis and generating

operational reports and forecasts, for example, in customer behavior. It uses tools such as data warehouses, data mining, marketing and campaign analysis, clustering and segmentation. Interactive CRM seeks to improve the organization's communication process with customers, suppliers and business partners in order to develop long-term cooperation. Such means as telephone, SMS, e-mail, snail mail, fax and voice applications are used for communication. Interactive CRM is mainly used for direct communication with customers in departments such as service, sales and marketing. Its essence is the active acquisition and exchange of data with key customers and the rest of the environment.

Nowadays, in the era of the digital revolution, we can see other examples of technological transformation in organizations. One such implementation is artificial intelligence (hereafter AI) (Gwiaździński, 2018, p. 228). AI is an issue that structures and gives direction to methods of designing "intelligent machines" so that they behave in ways that mimic the intelligence of humans (Nilsson, 2014, p. 2). Thus, it is the ability of a digital computer or a computer-controlled robot to perform specific actions commonly attributed to intelligent individuals (e.g., inference, pattern finding, learning, problem solving (Warszycki, 2019, p. 114). Computer systems with artificial intelligence functionalities allow, among other things, the acquisition and management of data containing information about consumers shopping online. When consumers move online, companies collect information about almost all their activities, record them and combine them with other data. During these operations, data are recorded indicating, among other things, what information a customer searches for on an Internet search engine, what products he or she buys, in what order this is done, and how much specific time he or she spent on these activities. Nowadays, AI is used not only to build customer knowledge, but also to develop services and products, support customer service processes, manage production, forecasting and risk assessment (Balakrishnan et al., 2020). In recent years, an observable trend in the management of an organization's communication with customers is the introduction of dialogue systems called chatbots into the customer service office and the use of digital assistants with speech synthesizers (Dağlı, 2018, p. 22; Kaczorowska-Spychalska, Sułkowski, 2018, p. 93). Chatbots simulate a conversation with a consumer using artificial neural networks (Budzanowska-Drzewiecka, 2018, p. 326). They have the ability to talk to people and process natural language (Carter, Knol, 2019, p. 113, so they can answer questions to increase the efficiency of communication (Popiel, 2022, p. 269). These include informational, transactional and advisory chatbots (Kozłowska, Rodzik, 2018, p. 8). The former provide the customer with simple information such as temperature, cloud cover, stock market indexes, among others. Transactional chatbots enable a specific action, among others, ordering a cab, making a money transfer, booking concert tickets. The last advisory type is an example of a program with a developed artificial neural network, which creates certain algorithms based on the customer's behavior, requests, actions in order to be able to offer better and more personalized alternatives in the next confrontation with the consumer (Kozłowska, Rodzik, 2018, p. 8). Chatbots used in customer communication bring numerous benefits to

an organization, i.e. influencing consumer behavior, reducing customer service costs (Budzanowska-Drzewiecka, 2018, p. 331), communicating with customers 24 hours a day (Zumstein, Hundertmark, 2017, pp. 101-103), and more. The company's communication with the customer can also take place through digital assistants, which have a speech synthesizer that allows them to communicate audibly with the consumer and control via voice commands. Commonly known digital assistants include Amazon's Alexa, Google Assistant from Google, Siri from Apple and Cortana from Microsoft (Jarek, Mazurek, Hałas-Dej, 2018, p. 195; López, Quesada, Guerrero, 2018, pp. 242-243). Through them, a customer can turn off the lights at home, lower the blinds, order food, make a doctor's appointment, book a table at a restaurant, pay bills or change the temperature in a room (Bartosik-Purgat, Mruk, 2017, p. 249). According to entrepreneurs, in the future, applications of artificial intelligence will expand to include generating quick, automatic recommendations for customers and forecasting sales.

In an era of progressive digitization of businesses, there is a constant increase in the amount of information collected. "The amount of information is growing four times faster than the global economy, and the computing power of computers is growing nine times faster" (Mayer-Schönberger, Cukier, 2014, p. 24). Hence the great importance of Big Data and Big Data analysis in marketing communications with customers. By Big Data is meant very large databases that are difficult to use and difficult to manage with conventional software (Sondhi, Arora, 2014). Taking into account in the analysis of Big Data all customer data collected by the enterprise without a known purpose, it is easier to discover unexpected value that was not even anticipated or expected by performing traditional analyses (Graczyk-Kucharska, 2015, p. 272). Examples of this type of data being analyzed include: social networks such as: Facebook, Twitter, LinkedIn; applications such as Whatsapp, Messenger or Pinterest, Instagram, Skype and Viber; video portals, e.g. YouTube, ipla, or other sources that allow for the collection of customer data, e.g. on the amount and type of music downloaded from the Internet, movies watched on video-on-demand services, etc. In the case of conducting online communication activities, thanks to Big Data analysis, the central focus is no longer on content, but on the individual nature of the message (e.g., ads appearing on users' computer screens) (Drzazga, 2016, p. 91). With the help of analysis of a number of external and internal factors, the content of ads that should be shown to individual users can be determined (e.g., each individual banner ad is individually prepared and delivered to the user in real time). In turn, the recipient(s) of communication activities can also decide for themselves what they want to "watch".

In conclusion, it is worth noting that mobile Internet communication allows optimizing the process of marketing communication of enterprises (Drzazga, 2016, p. 91), and in particular it allows reducing costs (digital media are used in it), facilitates reaching the target audience in real time, can be individually tailored to the location and preferences of customers, and allows direct dialogue with consumers.

3. Digital nature of marketing communications of enterprises located in Poland in own research

The research on digital competence of companies located in Poland, undertaken under UGB research grant No. 744, was commissioned to the IPC Research Institute Sp. z o.o. in Wrocław and conducted on a sample of 225 companies in July-September 2020 across Poland (16 provinces). The selection of the research sample was stratified and random. The respondents were owners, board members, general managers or managers in charge of IT in the surveyed organizations. The research covered several areas of business operations. One of them was the area of marketing. The aim of the research undertaken in this area was, among other things, to learn about the digital nature of marketing communications of enterprises located in Poland, differing in business profile, form of ownership, ownership capital and number of employees, by learning the opinions of the surveyed entrepreneurs on the digital solutions used by their companies. The research sample included 75 (about 33%) each of manufacturing, trade and service organizations, as well as an equal number (75 each - about 33%) classified as small enterprises (employing 10 to 49 people), medium-sized enterprises (50 to 249 people) and large enterprises (250 people and above). 124 enterprises (about 55%) were incorporated companies, 79 (about 35%) partnerships, and only 22 (about 10%) were sole proprietorships. 173 enterprises (about 77%) had predominantly or exclusively Polish capital, while 52 (about 23%) had predominantly or exclusively foreign capital.

Statistical tests consisted of testing the statistical hypothesis of equality of the structure index (incidence rate) in two populations with tests of consistency (null hypothesis), against the alternative hypothesis (the structure index in one population is greater than in the other). The research was carried out with a significance coefficient of $\alpha=0.1$. Thus, companies in three industries were tested in pairs against each other by company size, form of ownership and ownership capital. For the purpose of learning about the digital nature of the marketing communications of the surveyed companies, a five-point scale was used: definitely no, rather no, hard to say, rather yes, definitely yes, according to which respondents determined the digital-based activities undertaken in marketing communications by the surveyed companies. As an indicator of the structure for the population, the frequency of the trait (action) was used for the answers: definitely yes and rather yes (combined). The purpose of the study undertaken was to determine whether selected attributes of organizations (business profile, form of ownership, ownership capital and size of the organization) differentiate them in terms of digital solutions undertaken as part of marketing communications. These solutions included:

- the interactive nature of marketing communications,
- integration of means of communication (offline and online),
- monitoring the activities of stakeholders (customers, competitors, contractors) on the Internet,

- monitoring opinions about the company and its products in forums and social media,
- using cooperation with interactive agencies, advertising agencies and media houses in the implementation of marketing communications,
- use of IT tools for monitoring and managing customer contacts (CRM type, Marketing Automation, ERP, AI, etc.),
- the use of IT tools to automate marketing communications and conduct them through various communication channels,
- use of analytical tools to evaluate the effects of online communication (such as Google Analytics),
- introducing innovative marketing communication solutions to increase the company's competitiveness.

A general summary of all surveyed companies shows that about half of them undertake the listed activities using digital technologies in their marketing communications. For 20%, these solutions are not typical of their companies' marketing communications, while about 1/3 of respondents admitted that they do not know whether these activities characterize their companies. This may be related to a lack of orientation in the digital capabilities used in stakeholder communications.

To the greatest extent, the measures taken are differentiated by the size of the enterprise (Figure 1). This differentiation is particularly true for small enterprises, which significantly diverge from medium and large enterprises in the use of digital technologies. A statistically significant difference was confirmed in most of the listed digital solutions undertaken in marketing communications. Small enterprises are less likely than medium-sized ones to introduce innovative marketing communication solutions to increase competitiveness (41% of small and 55% of medium-sized enterprises, respectively), use IT tools to automate marketing communication and conduct it through various communication channels (41% and 56%, respectively), monitor the opinion of the company and its products on forums and social media (41% and 59%, respectively), use cooperation with interactive agencies, advertising agencies, media houses, etc. (29% and 47%, respectively). The same relationship regarding the latter activity also exists between small and large companies. Small companies, moreover, monitor the activities of customers, competitors and contractors on the Internet less frequently than large companies (44% of small companies and 55% of large companies, respectively).

It may come as a surprise that medium-sized companies monitor the opinion of the company and its products in forums and social media to a greater extent than large ones (59% and 44%, respectively). For the other activities, no significant statistical differences were shown between companies of different sizes.

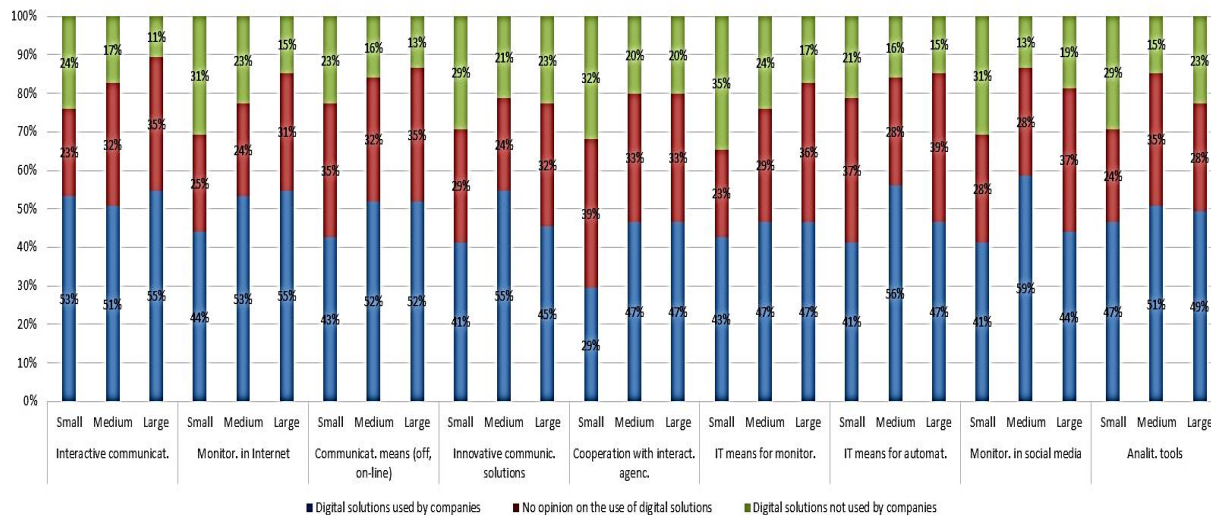


Figure 1. Digital solutions in marketing communications of companies of different sizes (by number of employees) (N = 225).

Source: own study.

Analyzing each of the three groups individually, it should be noted that the most frequently indicated feature of marketing communications of small enterprises is its interactive nature (53%). This feature was also indicated by the largest percentage of large enterprises (55%), and as many of them monitor stakeholder activities on the Internet. Medium-sized enterprises, on the other hand, most often use the Internet to monitor opinions about the company and its products on social media (59%).

Analyzing the digital solutions listed in the survey undertaken as part of marketing communications for several, significant statistical differences were noted between companies differing in ownership form (Figure 2).

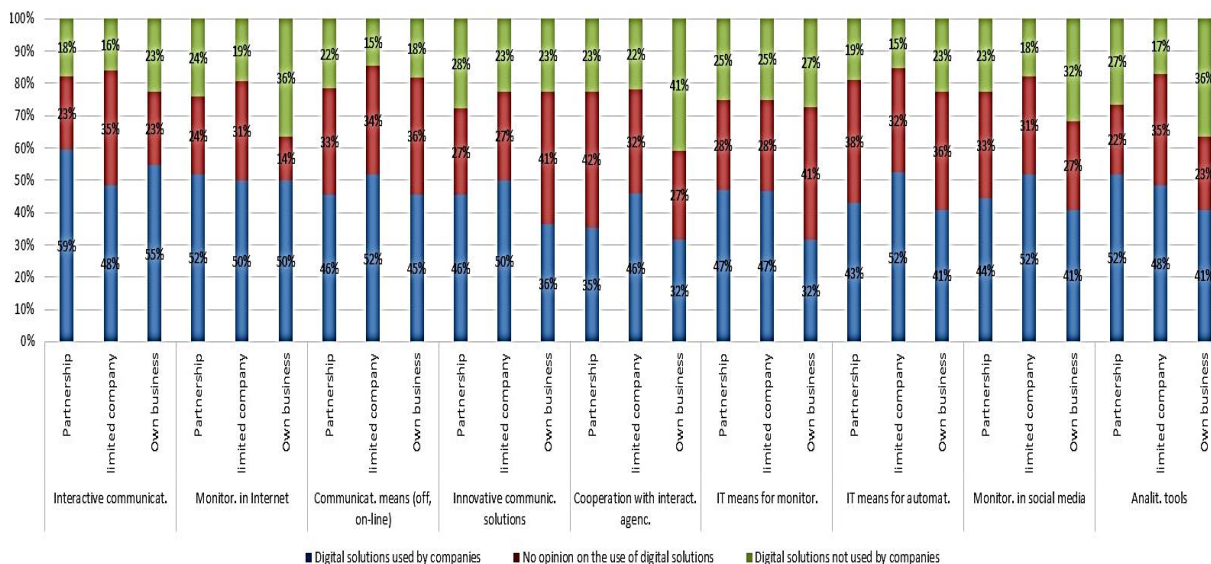


Figure 2. Digital solutions in marketing communications of companies differing in ownership form (N = 225).

Source: own study.

Partnerships use cooperation with interactive agencies, advertising agencies, fashion houses, etc. to a lesser extent than capital companies when implementing marketing communications (35% and 46% respectively) and use IT tools to automate marketing communications and conduct them through various communication channels (43% of partnerships and 52% of capital companies). Partnerships (59%), on the other hand, indicate to a greater extent than equity companies (48%) that their marketing communications are interactive. In addition, incorporated companies (47%) are significantly more likely than sole proprietorships (32%) to use IT tools to monitor and manage customer contacts (CRM, Marketing Automation, ERB, BI, etc. types). The statistical research did not show significant statistical differences in the other digital activities that characterize the marketing communications of companies differing in ownership form.

Analyzing each of the three groups of companies separately and comparing them with each other, it is worth noting that partnerships and sole proprietorships, among the selected digital activities, most often point to the interactive nature of communication, while limited liability companies point to the use of IT tools that allow marketing communication to be automated and conducted through various communication channels, as well as monitoring opinions about the company and its products on forums and social media.

The surveyed companies were also compared taking origin of the owner's capital as a basis. This organizational attribute unexpectedly differentiated the organizations in terms of their use of digital solutions in marketing communications (Figure 3).

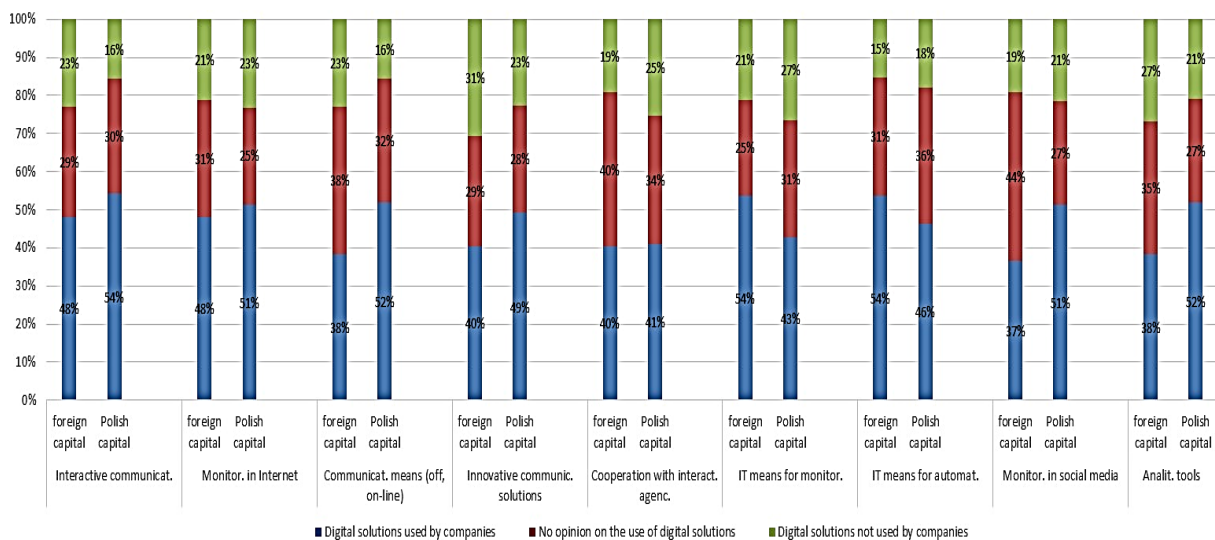


Figure 3. Digital solutions in marketing communications of companies with Polish and foreign capital (N = 225).

Source: own study.

Comparing companies with Polish and foreign capital, a difference in the measures they take was observed. In foreign companies, IT tools are most often used to automate marketing communication and conduct it through various communication channels, as well as IT tools for monitoring and managing customer contacts. In companies with Polish capital, most often

communication is interactive, the means of communication (offline and online) are integrated, and tools are used to evaluate the effects of online communication. Significant statistical differences between the two groups of companies, however, relate to a few selected characteristics. Surprisingly, it turns out that in companies with Polish capital more often than those with foreign capital, the means of communication (online and offline) are integrated (52% and 38%, respectively), opinions about the company and its products on the Internet are monitored (51% and 37%, respectively), and analytical tools are used to assess the effects of online communication (52% and 38%, respectively). Only in the case of the use of IT tools for monitoring and managing customer contacts do foreign-owned companies outperform Polish-owned companies (54% and 43%, respectively). No statistical difference was found when companies differing in ownership capital undertook other digital activities.

The least significant statistical differences were shown in the digital solutions used in marketing communications in companies that differ in their business profiles. The statistical research only confirmed significant differences between manufacturing and trading companies and manufacturing and service companies in the use of digital tools for monitoring and managing customer contacts. In both cases, manufacturing companies (53%) are more likely to use tools such as CRM, Marketing Automation, ERP, BI, etc., than trade (40%) and service companies (43%). Manufacturing companies (55%) are more likely to monitor the opinion of the company and its products on forums and social media (Brand24, Senti One, etc.) than trading companies (44%). In the case of undertaking other activities by companies, there were no significant statistical differences between companies in the above-mentioned industries.

Manufacturing companies (on average about 19%), service companies (on average about 21%) and retail companies (on average about 24%) do not undertake at all the listed activities specific to marketing communications based on digital technologies. It is puzzling that 36% of trade companies do not introduce innovative marketing communication solutions to increase the company's competitiveness.

4. Summary

The literature survey conducted and the results of our own research provide grounds for the conclusion that despite widespread awareness of the important role played by new digital technologies in the modern economy, many companies still have a lot of catching up to do in basic digital functions in the area of stakeholder communication. This is especially true for sole proprietorships and small businesses with 10 to 49 employees, nearly a third of which do not undertake any activities based on digital solutions. An overall summary of the digital solutions used by the surveyed enterprises in marketing communications shows that they are used in only half of the surveyed enterprises. However, their diversity and complexity mean that

an important feature of marketing communications for about half of the surveyed companies located in Poland is the integration of digital instruments and solutions. In order for this to be a feature of all enterprises, the biggest challenge is to build a management culture conducive to change and based on an understanding of the role of new technologies, which are now becoming a guarantor of their survival.

The assumption made in the study that different attributes of organizations, i.e. business profile, ownership capital, size and form of ownership determine their undertaking of digital activities in marketing communications was confirmed by the results of the study. Particularly statistically significant correlations were found in the case of enterprises differing in size. This is because small enterprises use most of the digital solutions included in the study in their marketing communications to a lesser extent than medium and large enterprises. It can be assumed that this is due to the fact that for small companies, investing in new technologies and digital solutions can be a huge challenge. The study further proved that companies with predominantly or exclusively Polish capital most often use different digital technologies in marketing communications than companies with predominantly or exclusively foreign capital. However, a significant statistical difference was shown in several activities they undertake. Surprisingly, in most of them it is the companies with Polish capital that are ahead of those with foreign capital. This provides a basis for dispelling stereotypes that allegedly Polish companies lag behind foreign ones in the use of modern technologies. An analysis of companies taking their business profile as a basis showed that modern digital solutions are used to a greater extent in manufacturing companies than in trade and service companies. For several of them, the difference is statistically significant. As expected, companies that are sole proprietorships incorporate digital solutions into marketing communications to a lesser extent than partnerships and limited liability companies. Similarly, as in the case of small businesses, this may be conditioned by financial considerations. On the other hand, incorporated companies use most of the digital solutions included in the survey in marketing communications to a greater extent than partnerships.

In conclusion, it should be added that marketing communication instruments related to the use of digital solutions, despite the fact that they are still not equally used in modern organizations differing in business profile, size, form of ownership or ownership capital, they are not completely alien to them and are used in marketing activities. It can be assumed that companies realizing that investment in digital technologies is now a way to stay ahead of the competition and realize above-average growth, allows them to achieve greater efficiency and provides them with new business opportunities will more often reach for them in marketing activity.

References

1. Balakrishnan, T., Chui, M., Hall, B., Henke, N. (2020). *The State of AI in 2020*. Retrieved from: <https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/global-survey-the-state-of-ai-in-2020>, 12.10.2022.
2. Bartosik-Purgat, M., Mruk, H. (2017). Zamiast zakończenia – inne obszary i kierunki badań nad zachowaniem konsumentów. In: M. Bartosik-Purgat (ed.), *Zachowania konsumentów. Globalizacja, nowe technologie, aktualne trendy, otoczenie społeczno-kulturowe* (pp. 247-254). Warszawa: PWN.
3. Billewicz, G., Olszak, C.M., Bartuś, K. (2015). Wykorzystanie systemów klasy CRM w działalności biznesowej przedsiębiorstw – wybrane wyniki badań. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, No. 232, pp. 178-192.
4. Błazewicz, G. (2012). *Marketing Automation - Nowa Szkoła Marketingu*, Retrieved from: <https://sprawnymarketing.pl/wp-content/uploads/2012/09/Marketing-automation-PL.pdf>, 9.10.2022.
5. Budzanowska-Drzewiecka, M. (2018). Stosunek polskich młodych dorosłych do chatbotów mobilnych w e-commerce – wybrane uwarunkowania. *Przedsiębiorczość i Zarządzanie*, Vol. XIX, Iss. II, No. 6, pp. 325-323.
6. Bukht, R., Heeks, R. (2017). Defining, Conceptualising and Measuring the Digital Economy. *Development Informatics*, No. 68, pp. 1-24.
7. Całka, A. (2015). Wykorzystanie nowych technologii w komunikacji marketingowej ośrodków opieki zdrowotnej w Polsce. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania*, Vol. 2, No. 39, pp. 327-337.
8. Carter, E., Knol, C. (2019). Chatbots – an organization’s friend or foe? *Research in Hospitality Management*, No. 9(2), pp. 113-115.
9. Dağli, M., (2018). *Designing for Trust. Exploring Trust and Collaboration in Conversational Agents for E-commerce*. Pittsburgh: Carnegie Mellon University.
10. Dahlman, C., Mealy, S., Wermelinger, M. (2016). *Harnessing the Digital Economy for Developing Countries*. OECD, Retrieved from: [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEV/DOC/WKP\(2016\)6&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEV/DOC/WKP(2016)6&docLanguage=En), 2.09.2022.
11. Drzazga, M. (2016). Komunikacja marketingowa przedsiębiorstw handlu detalicznego na początku XXI wieku. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, No. 261, pp. 86-99.
12. Gracz, L. (2016). The meaning of smartphones for marketing communication. *Marketing i Zarządzanie*, No. 5, pp. 165-172.
13. Graczyk-Kucharska, M. (2015). Big Data koniecznością współczesnego marketingu. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Problemy Zarządzania, Finansów i Marketingu*, Vol. 2, No. 41, pp. 265-277.

14. Gregor, B., Kaczorowska-Spychalska, D. (2016). *Blogi w procesie komunikacji marketingowej*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
15. Gudanowska, A., Kononiuk, A. (red.). (2020). *Uwarunkowania ucyfrowienia procesów produkcji i wzrostu kompetencji cyfrowych społeczeństwa*. Białystok: Politechnika Białostocka.
16. Gwiaździński, E. (2018). Świadomość i postawy konsumentów wobec stosowania artificial intelligence. *Przegląd Nauk Ekonomicznych*, No. 31, pp. 227-237.
17. Jarek, K., Mazurek, G., Hałas-Dej, S. (2018). Marketing i sztuczna inteligencja, Przedsiębiorczość i Zarządzanie, *Vol. XIX, Iss. II, No. 5*, pp. 191-206.
18. Kaczorowska-Spychalska, D., Sułkowski, Ł. (2018). Internet of Things – w poszukiwaniu przewagi konkurencyjnej. In: D. Kaczorowska-Spychalska, Ł. Sułkowski (Eds.), *Internet of Things. Nowy paradygmat rynku* (pp. 80-105). Warszawa: Difin.
19. Kozłowska, A., Rodzik, A. (2018), Chatboty: Perspektywy rozwoju technologii informatycznych w kontakcie z klientem. *Acta Universitatis Nicolai Copernici*, Vol. XLV, No. 1, pp. 7-17.
20. López, G., Quesada, L., Guerrero, L. (2018). Alexa vs. Siri vs. Cortana vs. Google Assistant: A Comparison of Speech-Based Natural User Interface. In: I.L. Nunes (Ed.), *Advances in Intelligent Systems and Computing* (pp. 241-250). Cham: Springer.
21. Mayer-Schönberger, V., Cukier, K. (2014). *Big Data – rewolucja, która zmieni nasze myślenie, pracę i życie*. Warszawa: MT Biznes.
22. Nilsson, J. (2014). *Principles of Artificial Intelligence*. Palo Alto: Morgan Kaufmann.
23. Perenc, J. (2013). Zarządzanie relacjami z klientem jako kluczowe narzędzie kontaktu banku z usługobiorcami. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Problemy Zarządzania, Finansów i Marketingu*, No 31(776), pp. 471-483.
24. Pieriegud, J. (2016). Cyfryzacja gospodarki i społeczeństwa – wymiar globalny, europejski i krajowy. In: J. Gajewski, W. Paprocki, J. Pieriegud (eds.), *Cyfryzacja gospodarki i społeczeństwa. Szanse i wyzwania dla sektorów infrastrukturalnych* (pp. 11-38). Gdańsk: Gdańska Akademia Bankowa.
25. Popiel, A. (2022). Czynniki zaufania do chatbotów w komunikacji organizacji. In: J. Tarapata, J. Woźniak (Eds.), *Odporność organizacji. Cyfryzacja. Bezpieczeństwo. Innowacje* (pp. 269-278). Warszawa: Difin.
26. Power, D.J. (2003). Interview: *Ron Swift comments on Decision Support and CRM*. Retrieved from: <http://dssresources.com/interviews/swift/swift11072003.html>, 5.10.22.
27. Raport (2020). *13 faktów o transformacji cyfrowej... czyli wszystko co chciałbyś wiedzieć o cyfryzacji, ale bałeś się zapytać*. Warszawa: Digital Shapers, PWC.
28. Rutkowski, J.P. (2020). Inteligentne technologie w marketingu i sprzedaży — zastosowania, obszary i kierunki badań. *Marketing i Rynek. Journal of Marketing and Market Studies*, Vol. XXVII, No. 6, pp. 3-12.
29. Schwab, K. (2018). *Czwarta rewolucja przemysłowa*. Warszawa: Studio Emka.

30. Śledziewska, K., Włoch, R. (2020). *Gospodarka cyfrowa. Jak nowe technologie zmieniają świat*. Warszawa: Wyd. UW.
31. Sondhi, S., Arora R. (2014). *Applying lessons from e-discovery to process big data using hpc*. Proceedings of the 2014 Annual Conference on Extreme Science and Engineering Discovery Environment, XSEDE '14, No. 8, pp. 1-2 ACM, New York. Retrieved from: <https://doi.org/10.1145/2616498.2616525>, 30.09.2022.
32. Szymański, G. (2016). Promocja innowacji jako system komunikacji przedsiębiorstwa z rynkiem. In: M. Barańska-Fischer, R. Błażlak, G. Szymański (Eds.), *Innowacje w biznesie. Wybrane zagadnienia* (pp. 97-131). Łódź: Politechnika Łódzka.
33. Warszycki, M. (2019). Wykorzystanie sztucznej inteligencji do predykcji emocji konsumentów. *Studia i Prace Kolegium Zarządzania i finansów SGH, No. 173*, pp. 111-121.
34. Wiechoczek, J. (2011). Interaktywne a tradycyjne narzędzia komunikacji marketingowej oferentów wybieralnych produktów systemowych. *Ekonomiczne Problemy Usług, No. 74*, pp. 497-510.
35. Wiktor, J.W. (2016). System komunikacji marketingowej w perspektywie produktu systemowego. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, No. 262*, pp. 46-56.
36. Zbrzyzny, M. (2011). Kształtowanie wizerunku organizacji w mediach społecznościowych, *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Poznaniu, No. 209*, pp. 50-60.
37. Zumstein, D., Hundertmark, S. (2017). Chatbots – an interactive technology for personalized communication, transactions and services. *IADIS International Journal, Vol. 15, No. 1*, pp. 96-109.

SOCIO-INSTITUTIONAL CONDITIONS AND THE DEVELOPMENT AND COMPETITIVENESS OF THE REGION

Arkadiusz TUZIAK

University of Rzeszów, Institute of Social Sciences; atuziak@tlen.pl, ORCID: 0000-0003-3984-4318

Purpose: The main objective of the article is to describe and analyze the selected regional socio-institutional circumstances and to identify the way and extent of their impact on the development and competitiveness of the region.

Design/methodology/approach: The article uses a method of targeted analysis of source literature in the wider field of regional studies. The subject-matter of the article covers issues of social capital, the role of the university in the development of the region, the role of public institutions and public policies, and innovation in terms of development and increased competitiveness of the region.

Social implications. The impact of the characteristics and analyzes contained in the article may be highlighted in the field of public policies implemented by local authorities, in particular as regards greater awareness of the role of soft, endogenous development factors in the form of social capital, the sphere of science and knowledge, the quality of public administration and the stimulation of regional innovation.

Originality/value. The value of the article is to identify and analyze how and to what extent the socio-institutional factors chosen affect the development and competitiveness of the region. The review of these issues and the general and synthetic considerations carried out are part of the development of regional studies, highlighting the importance of internal, social resources and potential influencing the direction and pace of development of the region.

Keywords: regional development, social capital, regional university, public institutions, innovation.

Category of the paper: General review.

Introduction

Regional development is influenced by a number of factors which affect to varying degrees the nature, dynamism and direction of the processes which shape the socio-economic situation of the region (Tuziak, 2013, pp. 126-146). There are many classifications and characteristics of conditions and factors for local and regional development in the literature of the subject (among

others Blakley, 1989; Jałowiecki, Szczepański, Gorzelak, 2007; Gorzelak, 2009; Gałązka, 2017; Adamowicz, 2020).

There are two main considerations of regional development factors (Korenik, 2003, pp. 64). One classification is dichotomy and it divides development factors by their origins into endogenous and exogenous ones. The first group comprises all own resources (internal) of the region which are relevant to its economy. They occur in the region and are somewhat reshaped. Most often they are specific to and produced by the region. On the other hand, exogenous factors are macro-economic and involve the development of the entire national economy. They are external to the region and therefore cannot influence their strength and direction. It is difficult to clearly determine which group of factors – endo or exogenous ones – have the greatest impact on the development of the region. It is emphasized that both types play an important role in development, although different types of regions have different hierarchy and dependency systems.

There are several types of regional development factors: Economic, social, technical, environmental, political ones (Korenik, 2003, pp. 65). Economic factors concern growth: capital, demand (and changes in its structure), population and corporate income, employment, labor productivity, investment, specialization in production and the use of modern management methods. Social factors include growth and changes in the pattern of consumption, the pace and nature of urbanization, changes in regional awareness, increased levels of education, increased activity and the spread of entrepreneurial and innovative attitudes, as well as improved efficiency in public administration. The most important factors among the technical ones are: modernization of the physical structure of the manufacturing equipment, development of technical and implementation facilities, diversification and improvement of production quality, development of the high-tech industry, development of production innovation and improvement of technical infrastructure. Environmental factors include progress in environmental protection, rationalization of its resource management and the implementation of recycling. The political factors relate to the nature of the power, the extent of its competence, the way in which it is exercised and the level of legitimacy of the public.

The development of the region depends on the size of its socio-economic potential. This potential is defined as opportunities and possibilities, defined on the basis of factors such as economic development, infrastructure, communication links, demographic structure, educational institutions and institutions of the business environment, the level of entrepreneurship and innovation, the quality of the natural environment and many others. The development of the region is strongly influenced by the level of social capital that determines the scope and efficiency of network cooperation, as well as by the efficiency of public institutions, in particular local and regional authorities.

Analyzes and studies on m.in. new factors and conditions for regional and local development and the variation in its pace, nature and results (Jałowiecki, Szczepański, Gorzelak, 2007; Korenik, 2012; Gałązka, 2017) highlight the change in the criteria for the

location of economic activities. Since the last decade of the past decade, quantitative criteria for the location and conduct of business (low-skilled labor, natural resources, financial assistance, industrial specialization, etc.) have been gradually replaced by qualitative criteria. Among others social capital, knowledge resources (universities, research centers), the quality of regional public administration, and innovation are becoming increasingly important.

Social capital

The concept of social capital is often found both in scientific literature and in publicism. It is also present in various documents relating to the practice of social life, including planning and implementation of regional development strategies. The popularity of this concept, frequency and multi-context (Dasgupta, Serageldin, 2000) of its use have resulted in a wide range of different definitions (cf. incl. Paldam, 2000; Bartkowski, 2007; Bhanduri, Yasunobu, 2009).

There are three main theoretical perspectives that explain the origin and the essence of social capital (Trutkowski, Mandes, 2005, pp. 48).

These are: (1) the cultural perspective - explains the origins of social capital through the influence of culture; social capital is a collective ethos, i.e. notions (social representation) shared by communities, norms and patterns of cooperative action, internalized by individuals through social impact; (2) the prospect of theory of rational operation - according to this theory, social capital is an emergent, spontaneous, unplanned and unreconciled whole product of countless individual strategies and rational individual actions; (3) historical and institutional perspectives - in this context, social capital is recognized as a result of a complex, multi-layered historical process, influenced by a wide variety of factors; it follows from the changing patterns of organization of human and institution activities, the changes in the availability of resources necessary for collective action, as well as changes in the structure of power and dominance, i.e. the pattern of relations between the elites and the rest of society.

The most well-known social capital theories in sociology include: Pierre Bourdieu (1986), James Coleman (1988) and Robert Putnam (1995). Each of these authors analyzed and defined social capital differently. The idea of social capital by Robert Putnam (1995) clearly refers to regional development. Social capital inperceived by R. Putnam is not so much a new proposal to call social relations and networks, but rather a comprehensive, psychosocial model to help solve the problem of the differences in the efficiency of the activities of identical institutions, but often counter-productive activities. Putnam assumes that effective governments are only possible if both the ruling and the government have a strong internal predisposition to cooperate. Cooperation skills are acquired by people through participation in various types of learning associations, through interaction and direct contacts, trust which over time exceeds the

association framework and shifts to other areas of social life. Social capital is a collection of competences and capabilities that are valuable not only for individuals but for the entire population. This is the capacity of society as a whole to develop a rich association life within the legal framework of civil society, as well as to create and strengthen intermediary structures between economic and political institutions.

For social capital according to P. Putnam is made up of the quality of association life in a given society, such as networks, standards and trust, which enable members of regional and local communities to increase the effectiveness of collective action and achieve their shared objectives more effectively (Putnam, 1995, pp. 56). In this respect, the author considers social capital to be collective and views it in the context of collective rather than individual objectives. Social capital is not something that is intended to replace state institutions or something that is intended to supplement the shortcomings of state policy and public governance. On the contrary, without the social capital that had been originally developed, it is difficult to manage society efficiently, because it "oils" the economic and political institutions and improves their operation. R. Putnam distinguished between bonding and bridging forms of social capital. Bonding social capital refers to relationships between people similar to each other and is therefore a factor in strengthening the homogeneity of the group (Community). Strong ties and frequent social interactions are characteristic of this form of social capital. It also implies a tendency to build barriers to protect against those who are not recognized as their own, and to exclude them from the group. In contrast, bridging social capital refers to building links between heterogeneous groups separated from each other. Bridge links are much weaker, but at the same time more inclusive, allowing them to cross the barriers to social structures and reduce the distance between people.

R. Putnam's analysis shows that the greater the social capital, the better the governance (and at the same time the more effective development of the regional community). This is based on the idea that active participation in relation networks gradually reorients the motivation of individuals. Special interests, selfishness, self-gain and career orientation are being given away by the concern for the common good, the issues of neighbourhood, municipalities, cities, regions, etc. the center of interest of the individual moves from 'me' to 'us'. In this process, an individual learns to better articulate collective needs and issues of common interest, and to place them above his own interests. A society that is connected by strong, high-trust, horizontal ties, thus gains greater empowerment, becoming civil society. The fundamental thesis of R. Putnam is that the social capital of civic communities characterized by a high degree of trust, norms of commitment to the public good and a dense network of associations promotes economic growth (Putnam, 1995, pp. 258-276).

The level of social capital has a decisive influence on the autonomous economic and civilizational development of human groups - local and regional communities - and determines the ability to adapt to changes caused by global factors. The declaration of a strong link between social confidence as a fundamental component of social capital and local and regional

development and the efficient functioning of the institutions has been reflected in many scientific studies (Szczepanski, Bierwiazonek, Nawrocki, 2008) and was supported by empirical research (Herbert, 2007). One of the well-known social capital researchers, Francis Fukuyama (1997), from its analysis of the determinants of socio-economic growth, concludes that social capital and a culture of trust are a key factor in development.

Regional and local environments through grassroots associations and initiatives are places of allocation of social capital resources, which enables new types of links to be generated and innovative actions to be launched. Trust – as part of social capital – at regional and local level is both cultural (through tradition, historical experience, collective identity) and institutional – depends on the style and efficiency of the institutions, especially public administration.

Social capital shall be classified and analyzed taking into account its quantitative or qualitative dimension. In the first case, account shall be taken of social cooperation and indicators demonstrating activities in this field, including the number of social organizations, the number of members of these organizations. The frequency of contacts within cooperation networks, etc. in the latter case, the effectiveness of social cooperation shall be examined in the form of the quality of the achievement of the common objectives of the community concerned. It is stressed that the quantitative consideration of social capital does not always amount to the quality of achieving social objectives. According to the findings of researchers (Florida, Cushing, Gates, 2002; Tura, Harmaakorpi, 2005), it is possible to have situations where a high level of social capital may hinder certain entrepreneurial and innovative activities of individuals, due to excessive social control or rigid social cooperation rules. In this connection, a distinction is made between social capital that is conducive to innovation and one that limits the creative and innovative activities of individuals.

Whether social capital takes the form of so-called creative social capital, which stimulates innovation and competitive development in the region, depends on a number of factors. The formation of such capital is facilitated by flattened social structures, characterized by equalized levels of income and education, as well as limited hierarchical management. The cooperation of diverse actors and the exchange of different social experiences have a positive impact on the development of creative social capital. Social capital based on bridging networks is more important for innovation. Networking enables the transfer of knowledge both codified and hidden. This will enable the region to launch an interactive learning process and create favorable conditions for the creation of regional innovation systems.

Cultural considerations are also important for the efficiency of social capital. Among these, social standards that reward cooperation, innovation and openness, as well as the ability to compromise in the name of the common good, are particularly important. However, if the common good is dominated by rivalry in defence of its own interests and a compromise in social dialogue is considered to be weak, then it means that it is impossible to combine the interests of the individual with the general interest. Thus, the cultural understanding of the individual interest and the general interest is essential for regional development. Regional

cooperation between enterprises is more important in building competitive advantages in the region by increasing innovation levels than competition between them (Grosse, 2007, p. 115).

Social capital is an important social and cultural resource facilitating regional development. However, the problem is that some regions have a deficit of this resource. The development of business-to-business networking is facing a serious barrier to lack of trust in mutual relations. It is important that local authorities in the regions mobilize social cooperation and encourage cooperation both on a formal and informal basis. Both types of cooperation play an important role in innovative development. The creation of regional cooperation networks and the improvement of the quality of social capital are encouraged by projects and programs requiring cooperation between various actors - enterprises, public administrations, scientific institutions (universities, research centers), financial institutions. Such networking requires, for example, the preparation and implementation of a regional innovation strategy aimed at building a regional innovation system. The functioning of the regional innovation system shall include the scope and mechanisms for implementing innovation that is self-produced or from outside the region, the diffusion of innovation and the cooperation of enterprises with R&D units, business environment institutions and public administrations. The result of innovation production and dissemination is the development of a regional innovation environment, which is created by research centers (universities, universities, R&D units), innovation and technology transfer centers, business incubators, science and technology parks, consulting institutions. The regional innovation environment is both a pro-innovation-oriented institution and a network-based collaboration system that integrates this environment and generates further innovation.

Innovation

Innovation is a feature of both individual actors and economies as a whole. Means the ability to create broadly understood innovations. It is an active commitment to innovative processes that demonstrate how to take action in this direction. It is conditioned by the resources available and the ability to participate in the processes of creation, implementation and absorption of innovations. Innovation can be expressed on a per-unit, organizational and macro-economic basis, and innovation in the national or regional economy is being considered in the macroeconomic perspective. On this scale, innovation is derived from pro-innovation resources – human, physical, capital, information – and skills and ability to continuously search for and exploit in economic practice the results of research, research and development, new concepts, ideas, inventions, introducing new methods of organization and management, improvement and development of infrastructure and knowledge resources (Niedzielski, 2008, pp. 150-151).

Innovation in the region is the ability to implement reforms, changes, improvements in various aspects of socio-economic life. Its aim is to improve the efficiency of the mechanisms to support regional development (Przygodzki, 2007, pp. 142-144). The concept of innovation is linked to the concept of innovation capacity. At the regional level, innovation capacity is a set of internal conditions and characteristics for a region, enabling the launch and implementation of innovation processes. It is a team of regional features and resources that are critical to the efficiency of resource creation and innovation processes. On a subjective basis, the innovation capacity of the region is the sum of the innovation capacity of the various actors in the regional innovation system, together with the synergy mechanisms in the region. These capacities are created by actors in the regional innovation stage, i.e. economic operators, research and scientific bodies, business community institutions and public authorities. In process terms, the region's innovative capacity can be considered as the sum of the component processes leading to innovation. The most important of these processes are learning, adaptation, dissemination and interaction. These processes are conducive to pro-innovative attitudes: creativity, openness, flexibility, entrepreneurship (Nowakowska, 2009, p. 24).

Innovation is a prerequisite for dynamic development and for building a strong competitive position in the region. It is most fully implemented through regional innovation networks. Several factors are crucial in their creation (Cooke, 1997, pp. 12-13). The first factor is interaction – both business and learning can have a two-way influence on the innovation process: push (push) and suction (*pull*). Small regional businesses, as well as users of products, processes, and services, can be important stakeholders in interaction. The second factor is the grouping, and experience has shown that in areas of greatest economic growth there are large networks of companies cooperating with each other and with state-owned business support agencies. The third important element of regional innovation is the creation of networks within which economic coordination takes place. Their forms are neither clearly hierarchical nor market-based, but rather stimulating reciprocity, exchange and trust, are often used by companies in innovative environments. Fourthly, at regional level, all elements of the innovative economy are important – from basic research to market information.

Research by the European Research Team on Innovation Communities (GREMI) has identified and described the interdependencies between innovation development and the development of the territory (region) concerned (Tuziak, 2013, pp. 76-79). The starting point of the GREMI research initiative was that innovation is organic in relation to the local business environment, is a product of innovation in this environment and meets the needs of local (regional) development. Innovation is not so much a company as an environment (*milieu*) in which it functions (Aydalot, 1986). Innovation is widely understood as a factor in the productive and endogenous development of the regional community (Tuziak, 2017, 2021). Studies and analyses of regional development disparities have shown that regions differ in their capacity and efficiency to create competitive and enabling conditions (environment) for innovative entrepreneurship (Storper, 1995; Florida, 2004; Aula, Harmaakorpi, 2008).

An environment in which cooperation and developed networks are a generator of innovation is an innovative environment (*innovateur milieu*) of entrepreneurship. The environment as such is not *a priori* innovative, conservative or inhibitory. It is innovative when it is able to actively rent, absorb and use information to produce new products or to organize an improvement in the production process (Jewtuchowicz, Pietrzyk, 2003). To do this, he must use his relations with the environment and interact with the outside world. The creative combination of the information obtained with local skills and competencies leads to the development of environmental-specific skills that provide the foundation for competitive advantage. The internal organization of the innovation environment and the various links and networks between businesses, customers, suppliers, research centers, public administrations are important for the efficiency of the impact of the innovation environment, business environment and competences, knowledge, norms of behaviour, etc. (Pietrzyk, 2000, pp. 49-50). An innovation environment is a defined whole with a territorial dimension, corresponding to a certain geographic space, which, however, does not have top-down boundaries and does not always coincide with a region in the generally accepted sense of the term. This territorial whole is characterized by unity and cohesion, expressed in clearly identifiable and specific attitudes and technical culture, understood as developing, transferring and accumulating practices, knowledge and skills, standards and values related to economic activity. In an innovative environment, there is a territorial convention respected by local actors in the form of an unwritten agreement. It enables integration and promotes the development of flexible forms of cooperation that are essential to the process of creating and implementing innovation.

The innovative process taking place in the innovative environment takes the form of innovation networks, in organizational terms, i.e. the intended relationship of cooperation between many actors, based on mutual trust and innovation-oriented. Within the network, there is a process of individual and collective learning that defines the creativity of the entire interactive set of network actors. Innovative processes are complex, dynamic and non-linear, almost always risk-related and provide some uncertainty about the final results. They require both a high level of expertise and diverse, specialized knowledge and a climate of cooperation and trust. Innovation networks are the optimal organizational form to link the activities of many actors (institutions), the exchange of knowledge (also referred to as hidden), experiences and ideas, and thus acquire collective skills that are higher than the sum of individual skills.

The regional innovation is a process of resource creation, the final result of which is technology and which involves the enterprise and its environment on an equal footing. The territory does not play an exogenous role in creating innovation and technology, but participates directly in it. The 'territoriality' of innovation is the result of a cumulative process that, by trial and error, leads to specific modifications and new developments in products or process (Pietrzyk, 2000, p. 51). Innovation is territorial, systemic and cultural. The region is the place of interaction needed to develop innovative processes, which means that innovation as their products is geographically rooted (Nowakowska, 2009, p. 37). Innovation and knowledge

are systemic and collective, they are created within the framework of the cooperation network. Through interactive, collective learning, local and regional environments are becoming a stimulus and a driver for innovation.

In a globalized economy, the development and competitiveness of regions depend mainly on the possibilities of using their knowledge, skills, creativity and entrepreneurship. Regional authorities play a crucial role in this process by mobilizing and developing endogenous resources, especially in the area of development of enterprises. They support networking between local companies, as well as their relationship with regional research facilities and the institutional business environment, and develop inter-regional links. Regional authorities have the best understanding of the strengths and weaknesses of local industry and can identify the most urgent needs for intervention and the mobilization of public sector resources (Tuziak, 2013, p. 211). Regional innovation strategies are the main instrument for regional policy in line with global development trends. They are used by regional authorities to assess the needs and possibilities for the use of knowledge and new technologies in the region and to plan and implement action programs aimed at improving the competitiveness of the region by increasing the innovation capacity of enterprises. An important objective of enabling authorities is to create an innovative environment in the region, which is made up of a number of elements to foster innovation. They are linked to among others technical infrastructure, human (human and social capital), social and cultural resources and technological, administrative and organizational resources.

Regions treating innovation as a priority of their development policy and therefore implementing innovation strategies record an increase in competitiveness, progress in the creation of an innovation system and a friendly climate for the establishment and development of companies, as well as an increase in the willingness of enterprises to undertake innovative activities. The innovation strategies implemented in the regions mobilize diverse and distributed regional resources to achieve consensus and synergies leading to increased regional competitiveness through integrated and comprehensively planned instruments and mechanisms to stimulate innovation-based and modern technology-driven development processes.

Knowledge resources – regional universities

Organizational and productive innovation and the introduction of modern technologies into businesses are important elements in developing and boosting regional competitiveness and entrepreneurship. The innovative economy in the regions is developing to a large extent through cooperation with regional universities (Boguski, 2008; Huggins, Kitagawa, 2012; Olechnicka, 2012; Piotrowska-Piątek, 2017). When analyzing this issue, reference can be made to studies on the changing perception of the role of universities in the context of regional development

(Grosse, 2007, pp. 106-107). Regional universities were initially seen as a place for the development of regional human resources, the accumulation of science and research, and as centers of knowledge and experience. Over time, the question of building contact with entrepreneurs and implementing development research from university directly to enterprises was first raised (Lawton-Smith, 2006). It is claimed, using an image comparison, that a university based on research plays the same role in the information economy as coal mines in the industrial economy (Castels, Hall, 1994).

The development of university-business cooperation is facilitated by the simultaneous launch of three types of public activities (Grosse, 2007, p. 107). Firstly, to support the development of universities themselves. State policy in this area should cover a longer time horizon and focus in particular on: developing academic and scientific infrastructure in universities; attracting highly qualified staff; stimulating cooperation with national and foreign centers. Secondly, support for cooperation between regional enterprises and universities. Thirdly, the creation of specific public institutions and programs aimed at transferring knowledge from universities to regional enterprises. Such knowledge transfer instruments may include university business incubators, technology centers and technology parks; regional agencies; public or public-private enterprises and other public-private partnership institutions involved in the transfer of knowledge and external experience.

In a knowledge-based economy, universities are viewed in a holistic manner (Etzkowitz, Leydesdorff, 1997; Etzkowitz, 2002; Tether, Tajar, 2008), in terms of their relationship with the external environment. The concept of the so-called triple helix (*triple helix*) outlines a broad perspective of research and analysis on the relationship between the three actors: The spheres of science, business and administration (Bojar, Machnik-Słomka, 2014; Puślecki, 2017). These three institutional spheres are entering into ever closer relations and interdependencies. The situation within each sphere and the relations between them form a system of interactions, having a significant impact on the functioning of the region's socio-economic system. They produce positive results m.in. in the form of the creation of many institutions and intermediate organizations operating in the functional space between science, business and public administration (Olechnicka, 2012, pp. 35-36). Not only spin-offs, business incubators and technology parks are being developed, but also institutions for the commercialization of research, technology transfer, patent rights, etc. they are centers for regional knowledge accumulation, improving the human resources of the regional economy and making development research available to businesses. As a result, the development processes in the region receive comprehensive support, with a clear strengthening and acceleration. The university can work with local authorities to develop regional development strategies and regional innovation policies, can build staff for local administrations and co-create networks of regional institutions to boost innovation and competitiveness in the region (Praweńska-Skrzypek, 2012).

The university plays an important role in identifying local development potential and shaping public policy for endogenous development. It also aims to transfer external experiences and apply them to regional circumstances in order to strengthen the internal resources of the region. Tomasz G. Grosse (2007, p. 108) recalls the examples of Australian (Guasear, 2006) and Finnish (Hayrinen-ALEStalo, Peltola, 2006) experiences which demonstrate the key importance of universities for the development of the outermost regions. They illustrate, *m.in.*, the participation of universities in the creation of regional cooperation networks and the development of regional and local development strategies, and their involvement in business cooperation. Relations between the economy and universities in the outermost regions have also been the subject of empirical studies on Spanish researchers (Garcia-Aracil, Fernandez de Lucio, 2008). They show that universities have an important role to play in the development of regions, not only because they are active in research, knowledge transfer and technology, but also because they are training graduates in accordance with the requirements and expectations of the regional labor market. Polish universities are also involved in regional development. For example, the involvement of academia in research and consultation work in developing regional innovation strategies is an example (Tuziak, Tuziak, Bobrecka-Jamro, Jastrzębska, 2006; Gorzelak, Bąkowski, Kozak, Olechnicka, Płoszaj, 2006), implementation of which is aimed at making development more dynamic and raising the level of innovation and regional competitiveness.

Public institutions and public policies

In order to accelerate the development and competitiveness of regions, it is very important to link national government public policies and regional authorities' actions. Studies and analyzes of regional development disparities show that the division between the northern and southern countries is clearly visible in the European Union. In general, the outermost regions of the North of Europe are examples of the success of public policies and the stimulation of innovative entrepreneurship. On the other hand, the peripheral and less developing areas in the southern countries of the continent have serious difficulties in launching long-term development processes based on modern, innovative technologies. The reasons for the diversification of the outermost regions in the northern countries and in the southern countries of Europe are diverse. They concern, among others national capitalist institutions, the potential of the national economy, as well as cultural and social phenomena, including the efficiency of the functioning of the public administration (Grosse, 2007, p. 132).

There are several features of public policies that are important for development success. Firstly, a well-targeted and long-term policy of the national government, especially toward the outermost regions, is essential. Public support from central authorities allows for the adoption

and implementation of activities and development objectives which are sufficiently prioritized from the point of view of strategic importance. Appropriate targeting of development processes in peripheral areas, within the framework of public policies, should encourage the activation of the factors and own resources needed to launch a self-sustaining endogenous development process. It is also important to implement public programs that stimulate the development of an innovative economy, including through the formation of regional clusters and the development of cooperation networks between regional actors.

Secondly, appropriate coordination of public policies at both central and regional level is needed to launch effective regional development processes. Cooperation between the regional innovation system and the programs and activities of the national innovation system is also important. Thirdly, regional policy should have an appropriate level of decentralized implementation, as it allows programs to be better adapted to regional needs and implementation mechanisms that take account of regional specificities. Fourthly, the national model of capitalism (Grosse, 2007, p. 135) has a significant impact on the shape of public policies for regions (especially those classified as outermost regions). Public policies are particularly important when there are disparities and inequalities in development at the regional level.

Summary

The dynamic, harmonious and sustainable development of the region, as a complex socio-economic system, can be characterized by the capacity to act and the pro-development behaviour of the actors involved in the system. In this context, the level of innovation of the various factors that affect the production, diffusion, absorption and transfer of innovation in the region is important. The factors affecting the level of innovation and competitiveness are, in particular, companies located in the region, their R&D potential (universities, research centers) and the quality of the broader business environment, mainly created by public institutions (local authorities, business community institutions, etc.). The innovative development of the region is largely a product of the innovativeness of the entities that make up the regional innovation system - enterprises, universities, research and development units, business environment institutions and public administration.

The article's characteristics and analyzes confirm that the level and nature of social capital as an internal resource of the region is a significant factor in its development. Social capital (in combination with human and intellectual capital) is integrated into a broader institutional and cultural context – value systems, rules and norms of behavior that organize social cooperation between individuals, groups and institutions based on trust, responsibility and reciprocity.

For the development of the region, it is important to develop a network of acting actors in the region, which consists of public authorities, enterprises, scientific and research institutions and institutions from the business environment. Thus, a regional innovation environment is developing, consisting of both tangible elements - enterprises and extensive technical infrastructure - and intangible elements - in the form of knowledge resources, social capital, values, norms, rules and behavioral patterns. Through regional actors' cooperation, it is possible to make better use of common endogenous development resources and increase the competitiveness of the region.

It should be stressed that public institutions, especially in the area of regional administration (self-government and government), can only effectively stimulate the growth of innovation and the competitiveness of the regional economy, when they are actively involved in the system of inter-related promotional initiatives undertaken by business, science and business Community actors. The level of effectiveness of enabling actions and the involvement of regional authorities in the process of improving the region's wider competitiveness is largely dependent on the ability to develop and effectively implement regional policies and public programs on a broader national and European scale.

References

1. Adamowicz, M. (2020). Uwarunkowania rozwoju lokalnego w kontekście kształtowania społeczno-ekonomicznego rozwoju Polski. *Studia Ekonomiczne i Regionalne Economic and Regional Studies*, no. 2, vol. 13, pp. 145-169. DOI: <https://doi.org/10.2478/ers-2020-0011>.
2. Aula, P., Harmaakorpi, V. (2008). An Innovative Milieu – A View on Regional Reputation Building: Case Study of the Lahti Urban Region. *Regional Studies*, vol.42(4), pp. 523-538.
3. Aydalot, P.H. (1986). Trajectoires technologiques et milieux innovateurs. In: P.H. Aydalot (ed.), *Milieux innovateurs en Europe*. Paris: GREASE.
4. Bartkowski, J. (2007). Kapitał społeczny i jego oddziaływanie na rozwój w ujęciu socjologicznym. In: M. Herbst (ed.), *Human capital and social capital and regional development*. Warszawa: Scholar.
5. Bhanduri, H., Yasunch K. (2009). What is social capital? A comprehensive revive of the concept. *Asian Journal of Social Science*, nr 37, pp. 480-510.
6. Blake, E.J. (1989). *Planning Local Development. Theory and Practice*. London-New Delhi: Sage Publishing.
7. Boguski, J. (2008). Rola uniwersytetu w regionalnym systemie innowacji. *Nauka i Szkolnictwo Wyższe*, 1(31), pp. 55-64.

8. Bojar, M., Machnik-Słomka, J. (2014). Model potrójnej i poczwórnej helisy w budowaniu współpracy sieciowej dla rozwoju innowacyjnych projektów regionalnych. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie*, z. 76, pp. 99-111.
9. Bourdieu, P. (1986). The Forms of Capital. In: J.G. Richardson (ed.), *Handbook of Theory of Research for the Sociology of Education*. New York: Greenwood press.
10. Castels, M., Hall, P. (1994). *Technopoles of the World*. London-New York: Routledge.
11. Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, vol. 94 (supplement).
12. Cooke, P. (1997). Planowanie regionalnej sieci innowacyjnej: doświadczenia regionalnej polityki innowacyjnej Unii Europejskiej w Południowej Walii. In: W. Kozak, A. Kukliński, J. Szlachta (eds.), *Polityka rozwoju regionalnego; innowacje i restrukturyzacje*. Warszawa: Polska Agencja Rozwoju Regionalnego, Uniwersytet Warszawski, EUROREG.
13. Dasgupta, P., Serageldini, I. (eds.) (2000). *Social Capital; A Multifaceted Perspective*. Washington, DC: The World Bank.
14. Etzkowitz, H. (2002). Incubation of incubators: innovation as a triple helix of university-industry-government networks. *Science and Public Policy*, vol. 29, pp. 115-128.
15. Etzkowitz, H., Leydesdorff, L. (1997). Introduction Universities in the global knowledge economy. In: H. Etzkowitz, L. Leydesdorff (eds.), *Universities and the Global Knowledge Economy: A Triple Helix of University-Industry-Government Relations*. London: Printer.
16. Florida, R. (2004). *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Live (Paperback)*. New York: Basic Books.
17. Florida, R., Cushing, R., Gates, G. (2002). When social capital stifles innovation. *Harvard Business Review*, vol. 80(8), pp. 30-31.
18. Fukuyama, F. (1997). *Zaufanie: kapitał społeczny a droga do dobrobytu*. Warszawa-Wrocław: PWN.
19. Gałązka, A. (2017). Teoretyczne podstawy rozwoju regionalnego – wybrane teorie, czynniki i bariery rozwoju regionalnego. *Studia BAS*, nr 1(49), pp. 9-61.
20. Garcia-Aracil, A., Fernandez De Lucio, I. (2008). Interactions in Peripheral European Region: An Empirical Study of Valencian Firms. *Regional Studies*, vol. 42(2), pp. 215-227.
21. Gorzelak, G., Bąkowski, A., Kozak, M., Olechnicka, A., Płoszaj, A. (2006). *Polskie regionalne strategie innowacji: ocena i wnioski dla dalszych działań*. Warszawa: Regional Studies Association – Sekcja Polska.
22. Gorzelak, G. (2009). Fakty i mity rozwoju regionalnego, *Studia Regionalne i Lokalne*, Nr 2(36), s.5-27.
23. Grosse, T.G. (2007). *Innowacyjna gospodarka na peryferiach?* Warszawa: Foundation for the Institute of public Affairs.
24. Gunasekara, Ch. (2006). Universities and Associative Regional Governance: Australia Evidence in Non-core Metropolitan Regions. *Regional Studies*, vol. 40(7), pp. 727-741.

25. Hayrinen-Alestalo, M., Peltola, U. (2006). The Problem of a Market-oriented University. *Higher Education*, vol. 52, no. 2, pp. 251-281.
26. Herbst, M. (ed.) (2007). *Kapitał ludzki i kapitał społeczny a rozwój regionalny*. Warszawa: Scholar.
27. Huggins, R., Kitagawa, F. (2012). Regional policy and university knowledge transfer: Perspectives from devolved regions in the UK. *Regional Studies*, no. 46(6), pp. 817-832.
28. Jałowiecki, B., Szczepański, M.S., Gorzelak, G. (2007). *Rozwój lokalny i regionalny w perspektywie socjologicznej*. Tychy: Śląskie Wydawnictwo Naukowe, Wyższa Szkoła Zarządzania i Nauk Społecznych w Tychach.
29. Jewtuchowicz, A., Pietrzyk, I. (2003). Rozwój terytorialny. Teoria a polska rzeczywistość (przykład regionu łódzkiego). In: A. Klasik (ed.), *Zarządzanie rozwojem terytorialnym w kontekście integracji europejskiej*, Katowice – Chorzów: KPZK PAN, Komisja Studiów nad Przyszłością Górnego Śląska PAN, O/Katowice, Akademia Ekonomiczna im. K. Adamieckiego w Katowicach, Górnośląska Wyższa Szkoła Przedsiębiorczości im. K. Godenki.
30. Korenik, S. (2003). *Dysproporcje rozwoju regionów Polski – wybrane aspekty*. Wrocław: Wydawnictwo Akademii Ekonomicznej im. Oskara Langego we Wrocławiu.
31. Korenik, S. (2012). Współczesne uwarunkowania rozwoju regionalnego i lokalnego w realiach polskich. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Ekonomiczne Problemy Usług*, nr 99, pp. 111-123.
32. Lawton-Smith, H. (2006). *Univercities, innovation, and the Economy*. London: Routledge.
33. Niedzielski, P. (2008). Innowacyjność. In: K.B. Matusiak (ed.), *Innowacje i transfer technologii. Słownik pojęć*. Warszawa: Polska Agencja Rozwoju Przedsiębiorczości.
34. Nowakowska, A. (2009). Regionalny kontekst procesów innowacji. In: A. Nowakowska (ed.), *Budowanie zdolności innowacyjnych regionów*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
35. Olechnicka, A. (2012). *Potencjał nauki a innowacyjność regionów*. Warszawa: Scholar.
36. Paldam, M. (2000). Social capital: One or many? Definition and measurement. *Journal of Economic Surveys*, no. 14, pp. 629-653.
37. Pietrzyk, I. (2000). *Polityka regionalna Unii Europejskiej i regiony w państwach członkowskich*. Warszawa: PWN.
38. Piotrowska-Piątek, A. (2017). Trzecia misja szkół wyższych w Polsce w kontekście ich roli w rozwoju regionalnym. *Edukacja Ekonomistów i Menedżerów*, 44(2), pp. 111-129. <https://doi.org/10.5604/01.3001.0010.5936>.
39. Prawelska-Skrzypek, G. (2012). Zmieniająca się rola uniwersytetów w regionalnej polityce innowacyjnej. *Samorząd Terytorialny*, no. 10, pp. 21-27.
40. Przygodzki, Z. (2007). Konkurencyjność regionów. In: J. Chądzyński, A. Nowakowska, Z. Przygodzki (eds.), *Region i jego rozwój w warunkach globalizacji*. Łódź: CeDeWu.

41. Puślecki, Z.W. (2017). Model potrójnej helisy (*triple helix*) we wzroście efektów innowacyjnych i konkurencyjności. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, nr 475, pp. 238-257, DOI: 10.15611/pn.2017.475.21.
42. Putnam, R.D. (1995). *Demokracja w działaniu. Tradycje obywatelskie we współczesnych Włoszech*. Kraków-Warszawa: Znak, Fundacja im. S. Batorego.
43. Storper, M. (1995). Regional “worlds” of production: learning and innovation in the technology districts of France, Italy and the USA. *Regional Studies*, vol. 27, pp. 433-455.
44. Szczepański, M.S., Bierwiazzonek, K., Nawrocki, T. (eds.) (2008). *Kapitały ludzkie i społeczne a konkurencyjność regionów*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.
45. Tether, B.S., Tajar, A. (2008). Beyond industry – university – links: Sourcing knowledge for innovation from consultants, private research organizations and the public science – based. *Research Policy*, no. 37, pp. 1079-1095.
46. Trutkowski, C., Mandes, S. (2005). *Kapitał społeczny w małych miastach*. Warszawa: Scholar.
47. Tura, T., Harmaakorpi, V. (2005). Social Capital in Building Regional Innovative Capability. *Regional Studies*, vol. 39(8), pp. 1111-1125.
48. Tuziak, A. (2013). *Innowacyjność w endogenicznym rozwoju regionu peryferyjnego. Studium socjologiczne*. Warszawa: Scholar.
49. Tuziak, A. (2017). Innowacyjność i kapitał ludzki w rozwoju regionu. *Nierówności społeczne a Wzrost Gospodarczy*, no. 52/4, pp. 106-120, DOI: 10.15584/nsawg.2017.4.7.
50. Tuziak, A. (2021). Innovativeness as a resource for the development of a peripheral region. *Scientific Papers of Silesian University of Technology. Organization and Management Series*, No. 152, pp. 219-231, DOI: 10.29119/1641-3466.2021.152.17.
51. Tuziak, A., Tuziak, B., Bobrecka-Jamro, D., Jastrzębska, W. (2006). *Innowacyjność i rozwój. Zakres i formy aktywności innowacyjnej administracji publicznej Podkarpacia w procesie trwałego rozwoju regionu*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego.

USING HIGH-TECH TOOLS FOR CONSUMER BUYING DECISIONS OF FMCG

Małgorzata WIŚCICKA-FERNANDO^{1*}, Konrad BIERCEWICZ²

¹ Institute of Management, Faculty of Economics, Finance and Management, University of Szczecin;
malgorzata.wiscicka-fernando@usz.edu.pl, ORCID: 0000-0001-9928-3335

² Institute of Management, Faculty of Economics, Finance and Management, University of Szczecin;
konrad.biercewicz@usz.edu.pl, ORCID: 0000-0003-1635-4527

* Correspondence author

Purpose: The main aim of this paper is to explore consumer decisions and emotions during shopping at the self-service store with fast-moving consumer goods (FMCG).

Design/methodology/approach: The subject of the study is to assess the impact of emotions during the choice-making process on consumers' buying decisions. The respondents are citizens of the West Pomeranian region, Poland. The survey was conducted using state-of-the-art data acquisition technologies, i.e., Virtual Reality and EEG. An interview was also used as a complementary form. The research was both qualitative and quantitative, with a research sample of 34 respondents and took place in the virtual world. The researchers used primary data. The results presented here are part of a broader research project that used a triangulation of research methods to allow a deeper analysis of the conscious and unconscious aspects of the subjects.

Findings: The research provided independent data on consumer emotions. The authors identified 4 groups of emotions that appeared during the selection of a product and were highly differentiated and strongly dependent on such characteristics as consumer type and gender. It has also been noticed that the longer a product is held, the lower emotional "sleepiness".

Research limitations/implications: One of the main limitations is the data collection process, which is relatively expensive, so the sample size is limited. The results obtained can be a signpost for a researcher who would like to use this new technology for further research.

Practical implications: The results obtained can be used by shop managers in planning the sales activities or shop space to help the customer decide.

Originality/value: In the research was used an innovative combination of virtual reality (VR) equipment and an electroencephalogram (EEG). To the best of the authors' knowledge, the results of a study from the FMCG industry using both devices simultaneously have never been published.

Keywords: consumer behaviour, virtual reality, new technology, EEG.

Category of the paper: Research paper.

1. Introduction

The starting point for analysing buying decisions is consumer attitudes (Alalwan et al., 2017). The decision-making process itself is a multi-stage one, and at different levels, there may be returns of consumer activity, e.g., withdrawal, or abandonment of buying. Therefore, the difficulty in predicting consumer buying decisions is due to both the factors shaping consumer attitudes, the environment, and the complexity of the decision-making stages. Explaining a consumer's behaviour before making a buying decision, or the motives for choice is a complex process (Khan et al., 2022). According to a study conducted at the University of Amsterdam, simple decisions are made with thought and complex decisions are made intuitively (Haslam, 2007). These studies have not only shown that too many options disrupt the decision-making process, but also disruption (e.g., obstruction), which influences more frequent wrong decisions. When complex decisions are made, even if they are well thought out, post-purchase satisfaction can be low. This is a result of the dissonance between the consumer's awareness of the various options, and the choice of a particular product. The choice becomes a trade-off, as it is not possible to have all options (Dooley, 2015). Also, increasing competition in both traditional and online sales areas is increasing the need to better understand what buying decisions consumers make and what they ultimately leave in their shopping carts. The increased interest in analysing consumer behaviour is also due to technological advances and related changes in consumer activity (Niu et al., 2021).

In the literature, there are two types of factors external and internal (Janoś-Kresło, 2012). External can be divided into economic and non-economic (Brzozowska-Woś, 2010, pp. 31-60). The most important external factors influencing buying decisions include advertising, price attractiveness, sales promotions, display, but also the opinion of another customer or advice - suggestion of sales staff (Kuś, 2011). Selection criteria can be divided into those related to cost, reputation, convenience, and presentation. In the case of online shopping, convenience, i.e. the method and form of payment, as well as delivery terms, is of importance (Saha et al., 2020).

The internal factors are those related to the consumer's person, e.g., motivation, personality, inclinations, and skills. Internal elements are highly individual and specific to each consumer. This individuality makes it impossible to predict consumer behaviour a hundred percent. Consumer behaviour refers to the mental and emotional process and activity of people, who buy and use goods and services to satisfy their needs.

Emotions are an internal factor strongly influencing consumer buying decisions, according to researchers they are more important than hard facts (Pawle, Cooper, 2006). Despite changing trends and growing consumer awareness, more than 80% of purchasing decisions are still made emotionally and irrationally (Rahmanian, 2013). Additionally, consumers do not make buying decisions in the context of maximizing utility (Antonides, 1998). The emotionality of the

decision is emphasized by psychologists, saying that buying decisions are based on feelings. They influence all interactions related to comparing products, checking, and purchasing (Cacioppo et al., 2016). To meet these attitudes, creating a positive consumer experience with a product or brand is increasingly becoming a popular activity of conscious companies (Dimitrakopoulos et al., 2020).

Emotionally driven purchases are most common in the FMCG product group (Matysik-Pejas, Szafrńska, 2011). In the case of these products, they are perishable products, sold mainly in retail stores, with a short lifespan, which consumers routinely buy and use right away (Gani, 2017). Nowadays strong emotions are also connected with sustainable behaviour during the purchasing of FMCG (Biercewicz et al., 2022).

An important element shaping the direction of research on consumer behaviour is new technologies, the rapid development of which has opened up opportunities to study consumer behaviour. Modern tools make it possible to record the movements of consumers and also to see what emotions accompany their buying decisions. This allows you to accurately analyse the decision-making process and indicate what internal and external factors may have influenced the various stages of the process. Data collection is carried out through modern tools such as the Virtual Reality (Moghaddasi et al., 2021), EEG (electroencephalography) (Xu et al., 2019), eye tracking (Meißner et al., 2019), facial expression (Bouzakraoui et al., 2017), HR (heart rate) (Dulleck et al., 2014), GSR (galvanic skin response) (Vecchiato et al., 2010). These devices make it possible not only to objectively record data on customer behaviour but also to determine behaviour patterns. The latter is particularly important in improving user experience. In addition, these tools can help plan store space and choose the communication tools that best suit the company's customer profile.

As indicated earlier, measuring emotions and decisions influenced by emotions is already possible. Such research is carried out, for example, within the framework of sensory marketing, or consumer experience. They constantly seek new experiences, and emotions like educational, entertainment, aesthetic, and escapist experiences.

One such tool is Virtual Reality (VR). VR is a technology that allows participants to spend time in immersive virtual environments (Han, Tom Dieck, 2019; Słupińska et al., 2021) and interact with content in a world that offers the shelter and illusion of an alternate reality. From a technological perspective, these are promising developments, and previous research examining consumer experiences often reveals that escaping VR experiences increase enjoyment and behavioural intentions (Loureiro et al., 2021).

Since each survey technique has its limitations it makes sense to combine different tools, in this case, modern ones, to obtain the most reliable results (Davidson, 2004). The authors also came to this conclusion, and this became the reason for researching consumer behaviour using four different survey techniques: CAWI, face-to-face in-depth interviews, an experiment using EEG tools, and eye tracking conducted in a virtual store, treated as the natural environment of the study.

In the research part of the article, the authors presented the theoretical assumptions of the problem under analysis and then discussed current research, in which data were collected on emotions during product choices i.e., product holding time. A research scheme was adopted, which formed the basis for the conducted research (see Figure 1). The analyses presented here exemplify the application of this scheme to consumer choice decisions. Included are selected results of quantitative research, qualitative research, and analysis that were achieved through the use of the VR environment and the EEG tool. In the last part, the authors presented plans related to the continuation of ongoing research in the analysed area.

2. Methods

The research aim of this study is to analyse emotions in consumers' shopping decisions in a virtual reality self-service store. The described pilot study aimed to gather primary data and analyse them following the research objectives to conclude.

The following research questions were posed:

1. What emotions were present in consumers during the decision-making process?
2. How emotions dominated consumers after putting products in shopping carts?

The authors assumed that decision-making took place while reaching for and holding the product in their hands. The study also assumed an independent variable in the form of an available assortment consisting of the following products: fruit, vegetables, dairy, fish, fast food, baked goods, drinks, and meat.

On the other hand, the following were taken as dependent variables: meantime, Arousal, and Valence index. The type of research was a qualitative study method, where the data was collected from 34 respondents.

Research tools: the study was conducted with the use of an EEG apparatus (electroencephalography) and VR (Virtual Reality).

The authors used the following research method: descriptive statistics: mean, Pearson correlation coefficient, Index of Arousal, and Valence.

2.1. Description of the study

The research procedure applied in the study was presented in Figure 1. The sample (N = 34) was selected by place of residence. The research problem was then formulated, which is presented at the beginning of Chapter 2.

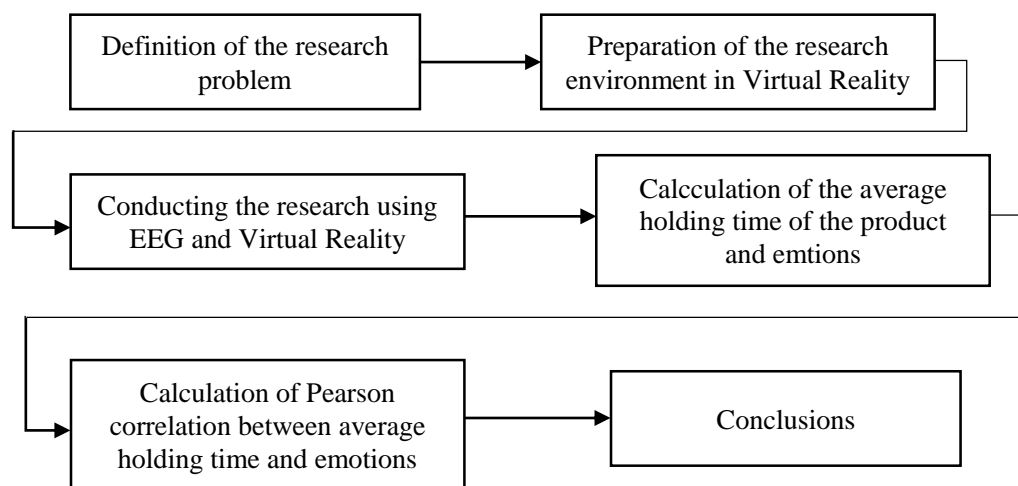


Figure 1. The research scheme.

Source: own collaboration.

An off-the-shelf Enzone supermarket store was used (Unity Supermarket, 2017), which was customised for the study and a virtual reality (VR) environment in the Unity engine. The environment was planned to credibly replicate a traditional FMCG shopping destination. By which is meant the creation of situations that mirrored those encountered by the subjects in the real world. Before the study, participants were informed about the study and signed a consent for voluntary participation (the studio has approval from the ethics committee to conduct this type of research). In addition, an interview was conducted, using a survey questionnaire, based on which consumers were assigned to one of four types of consumers (Kuś, 2011):

1. Considerate - individuals who shop in a planned manner.
2. Non-routine - individuals who rarely shop and for whom there is no automatism in their shopping process.
3. Habitual - individuals who have their habits and cannot imagine life without those products.
4. Impulsive - individuals who assess a product by its appearance or declare that they feel like buying something.

The percentage of each type of consumer is presented in Table 1.

Table 1.
Consumer type by gender

	Type of consumer			
	Considerate	Non-routine	Habitual	Impulsive
The number of women	26%	6%	17%	9%
The number of men	12%	9%	15%	6%

Source: own collaboration.

The participant in the study then watched a short instructional video, which showed how to move around, how to pick-up items, and the purpose of the simulation - to do everyday shopping. After watching the instructional video, and before the actual survey, participants had the opportunity to try moving around in the virtual environment. This made it possible to get used to the disruption of the study (Li et al., 2020).

The procedure to prepare the respondent for the study was to put on a cap (Enobio 20), connect electrodes to the scalp, and put on a VR device (HTC Vive Pro Eye).

A cap with 20 electrodes placed at the following points P7, P4, Cz, Pz, P3, P8, O1, O2, T8, F8, C4, F4, Fp2, Fz, C3, Fp1, T7, F7, Fpz was used to record the test session. The channels were placed according to the 10-20 system, an international EEG electrode placement system. The electrodes required wet placement for proper conductivity. To verify that the EEG electrodes were in good contact with the scalp, the impedance value was measured using Neuroelectronics® Instrument Controller (NIC2) software. The sampling frequency was 500 Hz.

Then, respondents were given 20 minutes (Beniczky, Schomer, 2020) to do their daily shopping in the virtual world. Setting a time limit was related to the respondents' well-being and health. The store consisted of 3 aisles (see Figure 2). The first aisle was located directly at the entrance to the store. Islands were placed in the middle of the aisle, where, among other things, products subject to the promotional campaign were displayed. In the second and third alleys, in addition to moving independent characters, boards were placed to block the passage (wet floor). The entire layout of the store is shown in Figure 2.

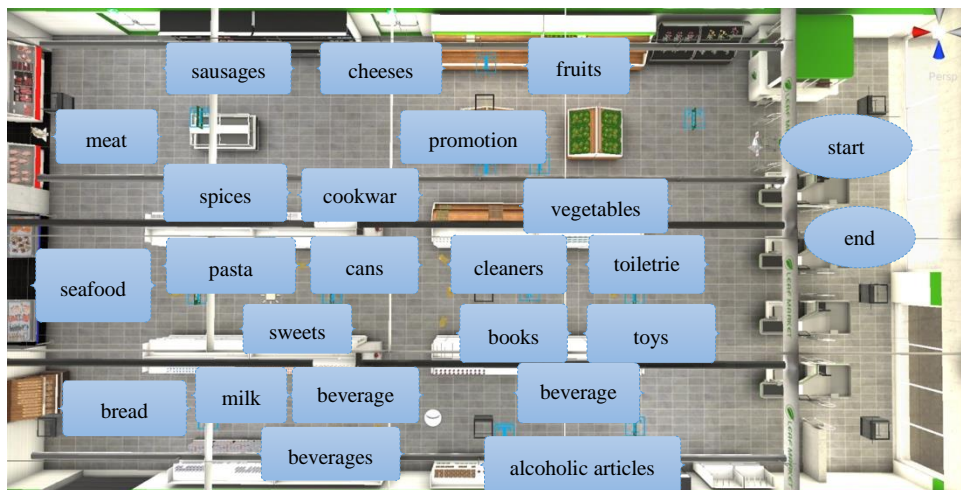


Figure 2. The layout of products in the virtual store.

Source: own collaboration.

Before entering the store in VR, respondents were shown a black screen for 60 seconds, the purpose of which was to mute the emotions and brain waves of study participants. All actions performed by the respondent were recorded into an excel file and recorded using OBStudio software. The collected data were used for further analysis.

2.2. Measures

In the first step, products were assigned to the following categories: fruits, vegetables, dairy, fish, fast food, baked goods, drinks, and meat. Then, using an event file that contained information about each product taken in hand, the time the product was held, and the decision made by putting the product in the shopping cart. As a result, based on this information, each product was assigned to the corresponding product category. In turn, the amount of time the product was held in the respondent's hands helped determine purchasing decisions. Emotion level indices were then calculated according to the Arousal and Valence indices, which are shown in Table 2. These indices were chosen for analysis because they can be used to study consumer decisions in simulation (Moses et al., 2018; Szymkowiak et al., 2020).

Table 2.

Description of the indices used in the test

Name of the Index	Formula	Counting method
Arousal [75]	$(F3_beta3 + F4_beta3) / (F3_alpha2 + F4_alpha2)$	Registration value from electrodes F3 and F4
Valence [75]	$(F4_alpha2 / F4_beta3) - (F3_alpha2 / F3_beta3)$	Registration value from electrodes F3 and F4

Source: own collaboration.

For further analysis, Pearson's correlation coefficient between the average holding time of the selected product and emotion was used, taking into account characteristics such as consumer type and gender.

3. Results

All data were analysed using Matlab R2019a. The EEG signal analysis started with filtering the bandwidth removing the power network disturbances, i.e., frequencies above 50 Hz. Besides, the signal was detrended and filtered using the Fieldtrip library. The EEG spectral signal was then analysed using a Morse wave, which calculated an average peak frequency of half a second in a frame (Lilly, Olhede, 2010, 2012; Wachowiak et al., 2018). However, to calculate the alpha and beta frequencies, the signal has been divided into appropriate bands (Tsipouras, 2019) – alpha2 (7-13 Hz) and beta3 (13-25 Hz).

In the presented study, the indices were used to determine the emotions accompanying respondents while holding a particular product. In this regard, four groups were distinguished - delighted emotions (positive value of Arousal and Valence indices), tense emotions (positive value of Arousal index and negative value of Valence index), disappointed emotions (negative value of Arousal and Valence indices), and sleepy emotions (negative value of Arousal index and positive value of Valence index).

The calculated holding time of the product and the waves responsible for emotions were recorded from the moment the product was taken in hand until it was put back in the basket. The results obtained are shown in table 3.

Table 3.
Product holding time and emotions

	Fruits	Vegetables	Dairy	Fish	Fast Food	Baked goods	Drinks	Meat
Mean time [s]	3.7116	3.4299	4.0085	4.3535	4.5171	4.5893	4.4508	4.6240
Arousal	-0.1634	-0.1216	0.0232	0.2049	0.1616	0.0607	-0.0932	0.5603
Valence	-0.0445	0.0008	-0.0079	-0.0389	0.0021	-0.0925	0.0182	0.0083

Source: own collaboration.

The researchers obtained the longest average holding time for products in the meat category - 4.62 seconds. In contrast, the shortest for products in the fruits category - was 3.71 seconds. Positive emotions were obtained for products from the fast food and meat categories. Negative emotions were observed for products from the fruits category.

The object of further analysis was to divide the respondents by consumer type (considerate, non-routine, habitual, impulsive) and gender (female, male). This allowed us to look specifically at the behaviour of different types of consumers, based on the results related to the average time of holding products (Table 4) and emotions (Table A1). If a field in the table shows a '-', it means that a product in that category was not selected. The fewest products were selected by women shopping non-routinely.

Table 4.
Average product holding time by consumer type and gender

Type	Gender	Mean time							
		Fruits	Vegetables	Dairy	Fish	Fast Food	Baked goods	Drinks	Meat
Considerate	Women	2.9235	4.3827	3.8127	5.6097	3.4249	2.5453	4.0726	2.5226
	Men	4.1435	2.4256	4.6977	4.4923	5.2150	6.2625	4.6525	4.2050
Non-routine	Women	3.3770	1.9827	2.7956	-	-	2.4260	5.5309	-
	Men	3.8282	3.7408	4.0787	-	9.3460	6.2970	-	9.2210
Habitual	Women	4.2947	2.5657	3.9516	4.7450	3.0463	3.9762	5.9191	2.5475
	Men	3.6716	4.7787	4.7304	3.4904	2.7455	7.0737	4.3502	-
Impulsive	Women	3.0015	4.1333	2.6827	3.8637	2.1910	2.4940	1.4880	-
	Men	4.4528	-	5.3184	3.9200	5.6510	5.6395	5.1425	-

Source: own collaboration.

Table 4 shows the results related to the average holding time for a product. Non-routine, male consumers took the longest time to decide on the fast food and meat categories. The time was 9.35 seconds and 9.22 seconds, respectively.

When analysing the shortest decision-making times, it is important to pay attention to consumers of the impulsive type, women, and non-routine type, women.

When analysing by product category, the shortest decisions were made toward drinks and vegetables. The results obtained show that only women of the 'impulsive consumer' type (1.49 seconds) and 'non-routine consumer' type (1.98 seconds) made such choices.

To identify the behaviour of the different categories of consumers, it is necessary to analyse the Arousal and Valence indexes in Cartesian order. The results for the emotions of different types of consumers by gender are presented in Table A1. The most delighted emotions in the 8 subgroups studied were obtained for the fast food and meat product categories. Interesting results were obtained among, considerate, female and non-routine, male customers. In this case, the analysis showed that the emotion accompanying their decision-making was tense.

The final result was to determine the relationship between the time of holding the product and the emotions associated with it, by gender and consumer type (Table 5). For this purpose, the Pearson correlation coefficient was calculated.

A strong and positive correlation was observed between the average time of holding a product and emotion for a group of products in the vegetable category for men who are a habitual consumer type (Arousal – $r = 0.87$; Valence – $r = 0.93$). This means that if we look at vegetables, for example, in terms of their freshness, there is a high probability that there will be no emotion associated with the choice, which consequently will not allow the researchers to determine whether the product will end up in the shopping cart.

Table 5.

Relationship between average product holding time and emotions

Type	Gender	Index	Mean time					
			Fruits	Vegetables	Dairy	Fish	Fast Food	Drinks
Considerate	Women	Arousal	-0.6787	0.2871	0.4896	-	-0.0312	-0.9953
		Valence	0.4985	0.1492	0.8347	0.7702	-	0.9977
	Men	Arousal	-0.4519	-	-	-	-	-
		Valence	0.9146	-	-	-	-	-
Non-routine	Women	Arousal	0.0600	-0.5095	-0.9676	-	-	-0.5449
		Valence	-	-0.4327	0.8736	-	-	-0.5449
	Men	Arousal	0.2855	-0.8459	-0.9635	-	-	-
		Valence	-0.2913	-0.7967	0.9330	-	-	-
Habitual	Women	Arousal	-	-	-0.8132	-0.3121	-	-0.8410
		Valence	-	-	0.3054	-0.7393	-	-0.8092
	Men	Arousal	-0.0465	0.8690	0.9986	0.9628	-	-
		Valence	0.5766	0.9291	-0.8327	-0.7915	-	-
Impulsive	Women	Arousal	-	0.2717	-0.4687	-0.7388	-	-
		Valence	-	-0.1252	-0.4822	0.1909	-	-
	Men	Arousal	-	-	-	-	-	-
		Valence	-	-	-	-	-	-

Source: own collaboration.

On the other hand, a strong and negative relationship was observed for products in the drinks category in the group of women who are a habitual consumer type (Arousal – $r = -0.84$; Valence – $r = -0.81$). This means that if we hold a product in our hands for a long time it is associated with a decrease in sleepy emotions, which may translate into a decision to purchase goods from this category.

When analysing the correlation between the average holding time of a product and the emotions associated with disappointment or tension, it is the type of consumer and gender that performs average, weak, or no such correlations.

4. Discussion

The results obtained indicate that in the surveyed groups of respondents, the emotions accompanying consumers when making buying decisions in Virtual Reality varied greatly and strongly depended on such characteristics as the type of consumer and gender.

The analysis shows that there is a negative correlation between the average holding time of a product and the sleepy emotion, which may consequently translate into the purchase of goods. Such behaviour may result from a rejection of a product based on a rational decision (Gomes, 2005; Jerath, Ren, 2021).

It has also been noted that sleepy emotions toward a product decrease or disappear if the time the product is held in the hand increases. However, it is not possible to determine in which direction the emotions will change. Analysing the direction of emotional change is an interesting problem for further research. This is confirmed by the buying decisions of the habitual consumer, in a group of women.

The results of the study showed that a positive relationship between the average time of holding a product from the 'vegetable' category and the sleepy emotion was obtained in the group of habitual consumers, but only men. In this case, it is not possible, based on emotion, to determine unequivocally whether the product will be purchased.

No relationship was found between emotions and the purchase decision for products in the fast food and meat categories, where emotions were distinguished. On the other hand, it is difficult for products in the fruits category to have a definite answer, as there are too large differences between the Arousal and Valence values obtained.

In addition, consideration should be given to using the interview method to determine one's own emotions. Such a survey technique is declarative. In addition, it is difficult to measure and confirm, since interviews are performed after a certain amount of time has passed since the survey. For example, if the research examining lasts 30 minutes, the interview may not be done until after the research examining is completed, or even a little later. This results in respondents not always being able to recall their emotions (Barkana et al., 2022; Labott et al., 2013), especially if we are interested in many specific moments, rather than the overall impression of the entire survey. This can lead to false answers. The information provided during the interview is subjective (it is the respondent's own opinion of his or her feelings during the study). However, if EEG signal analysis is used, the emotions occurring are recorded based on the signal. This study is devoid of the respondent's subjectivity. An important added value of this type of research is the ability to determine emotions at any time of shopping (Petermans et al., 2009; Szymkowiak et al., 2020).

The research conducted indicates very interesting emotions accompanying different types of consumers. The results of the research can provide interesting material for store managers. Knowledge of what emotions most often accompany consumers in a given product category can allow you to properly plan information activities or the appropriate presentation of the assortment. Which can affect the minimization of rejected products. Obtaining objective and representative results requires increasing the number of survey participants.

5. Summary

The authors of the study believe that in today's highly competitive market, filled with many products, it is becoming very important to study emotions individually and how they affect buying decisions. The availability of modern technology makes it possible to determine very precisely what and in which situation a particular emotion occurred. The results obtained allow for a better analysis of the attractiveness of the product but also can provide a basis for decision-making by store managers. The manager having access to the data can take more effective actions related to planning the place of sale, product presentation, and communication with the customer. The results obtained can also become a contribution to reducing negative emotions and transforming them into positive emotions. However, it should be taken into account that for some participants in the study the environment they were in, i.e., virtual reality determined the behaviour characteristic of gamers. The authors believe that the reason for this is the perception of the VR environment as a place where time plays an important role. Another limitation is the scope of the study - a pilot study. To obtain a representative survey sample, it is necessary to expand it. Nevertheless, the results obtained support the opinion that emotions accompanying selection - product choices can be distinguished and disappointed. If they were positive then products were more likely to be put in the shopping cart. This cannot be clearly stated in the case of the presence of negative emotions such as being sleepy and tense.

Acknowledgments

Research team: M. Borawski, K. Słupińska, M. Wiścicka-Fernando, J. Duda, K. Biercewicz, U. Chraćol-Barczyk.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Alalwan, A.A., Rana, N.P., Dwivedi, Y.K., Algharabat, R. (2017). Social media in marketing: A review and analysis of the existing literature. *Telematics and Informatics*, 34(7), 1177-1190.
2. Barkana, B.D., Ozkan, Y., Badara, J.A. (2022). Analysis of working memory from EEG signals under different emotional states. *Biomedical Signal Processing and Control*, 71, 103249. <https://doi.org/10.1016/j.bspc.2021.103249>.
3. Beniczky, S., Schomer, D.L. (2020). Electroencephalography: Basic biophysical and technological aspects important for clinical applications. *Epileptic Disorders*, 22(6), 697-715. <https://doi.org/10.1684/epd.2020.1217>.
4. Biercewicz, K., Chrańchol-Barczyk, U., Duda, J., Wiścicka-Fernando, M. (2022). Modern Methods of Sustainable Behaviour Analysis—The Case of Purchasing FMCG. *Sustainability*, 14(20), Art. 20. <https://doi.org/10.3390/su142013387>.
5. Bouzakraoui, M., Sadiq, A., Enneya, N. (2017). *A Customer Emotion Recognition through Facial Expression using POEM descriptor and SVM classifier*, p. 6. <https://doi.org/10.1145/3090354.3090436>.
6. Brzozowska-Woś, M. (2010). *Marketing. Ujęcie relacyjne, T. 1*. https://d1wqtxts1xzle7.cloudfront.net/35352825/Marketing_-_Ujecie_relacyjne-with-cover-page-v2.pdf?Expires=1668728912&Signature=DrjPlr~Db4Nvs9hqndND7pG9hHqG9wUy21GhlY~KnaUIAFaS8kTXPxQM8vQaZdFvAjVcLIiccUhtzD2va9Rsw8OFROh5NjkRoIKMzgsfdle7SdcKSOcaZ96xHWERMi9YO3vpXoIJ2McvCInpzzKCv7lQoFeG6cD0xGBMpd5QyvKk0fvqIVMcEQ-d6eG7j6Ckr3ObU5CpuqbBQrJ7cOKdUJ6um3ZyOsz4af4qtZ5zKALTXLIF0yBD0WbR0S8QqcOc9gVq7rLR3lM7ewLNyxO6ykJYvhv6fStwx2lJ1i1zP~OoNFHco-vrThYZnNR1kAMMk2zFRSGFvpIj~7KCXzowTQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA#page=31.
7. Cacioppo, J.T., Tassinary, L.G., Berntson, G.G. (eds.) (2016). *Handbook of Psychophysiology*. Cambridge University Press. <https://doi.org/10.1017/9781107415782>.
8. Davidson, R. J. (2004). What does the prefrontal cortex „do” in affect: Perspectives on frontal EEG asymmetry research. *Biological Psychology*, 67(1–2), Art. 1–2. <https://doi.org/10.1016/j.biopsycho.2004.03.008>.
9. Dimitrakopoulos, G., Uden, L., Varlamis, I. (2020). Chapter 5—Co-creation of value for user experiences. In: G. Dimitrakopoulos, L. Uden, I. Varlamis (eds.), *The Future of Intelligent Transport Systems* (pp. 63-77). Elsevier. <https://doi.org/10.1016/B978-0-12-818281-9.00005-X>.
10. Dooley, R. (2015). *Neuromarketing. 100 szybkich, łatwych i tanich sposobów na przekonanie klienta (I)*. Warszawa: PWN.

11. Dulleck, U., Schaffner, M., Torgler, B. (2014). Heartbeat and Economic Decisions: Observing Mental Stress among Proposers and Responders in the Ultimatum Bargaining Game. *PLoS ONE*, 9(9), e108218. <https://doi.org/10.1371/journal.pone.0108218>.
12. Gomes, O. (2005). Rational consumer choice. *Comunicação Pública, Vol. 1, no. 2*, <https://doi.org/10.4000/cp.9182>.
13. Han, D.-I., Tom Dieck, M.C. (2019). Calling for user-centric VR design research in hospitality and tourism. *Hospitality & Society*, 9, 237-246. https://doi.org/10.1386/hosp.9.2.237_7.
14. Haslam, S.A. (2007). I Think, Therefore I Err? *Scientific American*. <https://doi.org/10.1038/scientificamericanmind0407-16>.
15. Lilly, J.M., Olhede, S.C. (2010). On the Analytic Wavelet Transform. *IEEE Transactions on Information Theory*, 56(8), 4135-4156. <https://doi.org/10.1109/TIT.2010.2050935>.
16. Janoś-Kresło, M. (eds.). (2012). Gospodarstwa domowe w XXI. In: *Konsumpcja, jakość życia*. Szkoła Główna Handlowa.
17. Jerath, K., Ren, Q. (2021). Consumer Rational (In)Attention to Favorable and Unfavorable Product Information, and Firm Information Design. *Journal of Marketing Research*, 58(2), 343-362. <https://doi.org/10.1177/0022243720977830>.
18. Khan, A., Rezaei, S., Valaei, N. (2022). Social commerce advertising avoidance and shopping cart abandonment: A fs/QCA analysis of German consumers. *Journal of Retailing and Consumer Services*, 67, 102976. <https://doi.org/10.1016/j.jretconser.2022.102976>.
19. Kuś, G. (2011). *Decyzje zakupowe konsumentów a systemy komunikowania*. Novae Res.
20. Labott, S.M., Johnson, T.P., Fendrich, M., Feeny, N.C. (2013). Emotional Risks to Respondents in Survey Research: Some Empirical Evidence. *Journal of Empirical Research on Human Research Ethics*, 8(4), 53-66. <https://doi.org/10.1525/jer.2013.8.4.53>.
21. Li, J., Jin, Y., Lu, S., Wu, W., Wang, P. (2020). Building environment information and human perceptual feedback collected through a combined virtual reality (VR) and electroencephalogram (EEG) method. *Energy and Buildings*, 224, 110259. <https://doi.org/10.1016/j.enbuild.2020.110259>.
22. Lilly, J., Olhede, S. (2012). Generalized Morse Wavelets as a Superfamily of Analytic Wavelets. *IEEE Transactions on Signal Processing*, 60. <https://doi.org/10.1109/TSP.2012.2210890>.
23. Loureiro, S.M.C., Guerreiro, J., Japutra, A. (2021). How escapism leads to behavioral intention in a virtual reality store with background music? *Journal of Business Research*, 134, 288-300. <https://doi.org/10.1016/j.jbusres.2021.05.035>.
24. Matysik-Pejas, R., Szafrńska, M. (2011). The rationality of consumer behavior on the food products market. *Delhi Business Review*, 12(2), 11-19.
25. Meißner, M., Pfeiffer, J., Pfeiffer, T., Oppewal, H. (2019). Combining virtual reality and mobile eye tracking to provide a naturalistic experimental environment for shopper

- research. *Journal of Business Research*, 100, 445-458. <https://doi.org/10.1016/j.jbusres.2017.09.028>.
26. Moghaddasi, M., Marín-Morales, J., Khatri, J., Guixeres, J., Chicchi Giglioli, I.A., Alcañiz, M. (2021). Recognition of Customers' Impulsivity from Behavioral Patterns in Virtual Reality. *Applied Sciences*, 11(10). <https://doi.org/10.3390/app11104399>.
 27. Moses, E., Beavin-Yates, L., Zaval, L., Hendrickson, K. (2018). *The influence of an in-store gift on emotional arousal and shopper behavior*.
 28. Niu, X., Wang, X., Liu, Z. (2021). When I feel invaded, I will avoid it: The effect of advertising invasiveness on consumers' avoidance of social media advertising. *Journal of Retailing and Consumer Services*, 58, 102320.
 29. Pawle, J., Cooper, P. (2006). Measuring Emotion—Lovemarks, The Future Beyond Brands. *Journal of Advertising Research*, 46(1), 38-48. <https://doi.org/10.2501/S0021849906060053>.
 30. Petermans, A., Van Cleempoel, K., Nuyts, E., Vanrie, J. (2009). *Measuring emotions in customer experiences in retail store environments. Testing the applicability of three emotion measurement instruments*.
 31. Rahmanian, E. (2013). *The role of emotion in consumer purchase behavior*.
 32. Saha, S., Zhuang, G., Li, S. (2020). Will Consumers Pay More for Efficient Delivery? An Empirical Study of What Affects E-Customers' Satisfaction and Willingness to Pay on Online Shopping in Bangladesh. *Sustainability*, 12, 1121. <https://doi.org/10.3390/su12031121>.
 33. Słupińska, K., Duda, J., Biercewicz, K. (2021). Planning an experiment in a virtual environment reality as a place of research on human behaviour using methods of neuroscience measurement – bibliometric analysis and methodological approach. *Procedia Computer Science*, 192, 3123-3133. <https://doi.org/10.1016/j.procs.2021.09.085>.
 34. Szymkowiak, A., Gaczek, P., Jeganathan, K., Kulawik, P. (2020). The impact of emotions on shopping behavior during epidemic. What a business can do to protect customers. *Journal of Consumer Behaviour*, 10.1002/cb.1853. PMC. <https://doi.org/10.1002/cb.1853>.
 35. Tsipouras, M.G. (2019). Spectral information of EEG signals with respect to epilepsy classification. *EURASIP Journal on Advances in Signal Processing*, 1, 10. <https://doi.org/10.1186/s13634-019-0606-8>.
 36. Unity Supermarket (2017). <https://assetstore.unity.com/packages/3d/environments/urban/supermarket-interior-with-lod-65917>.
 37. Vecchiato, G., Astolfi, L., De Vico Fallani, F., Cincotti, F., Mattia, D., Salinari, S., Soranzo, R., Babiloni, F. (2010). Changes in Brain Activity During the Observation of TV Commercials by Using EEG, GSR and HR Measurements. *Brain Topography*, 23(2), Art. 2. <https://doi.org/10.1007/s10548-009-0127-0>.
 38. Wachowiak, M., Smolikova-Wachowiak, R., Johnson, M., Hay, D., Power, K., Williams-Bell, F. (2018). Quantitative feature analysis of continuous analytic wavelet transforms of

electrocardiography and electromyography. *Philosophical Transactions of The Royal Society A Mathematical Physical and Engineering Sciences*, 376, 20170250. <https://doi.org/10.1098/rsta.2017.0250>.

39. Xu, T., Yin, R., Shu, L., Xu, X. (2019). *Emotion Recognition Using Frontal EEG in VR Affective Scenes*. IEEE MTT-S INTERNATIONAL MICROWAVE BIOMEDICAL CONFERENCE (IMBIOC 2019). IEEE.

Appendix

Table A1.
Average Arousal and Valence during holding the product in the hand

Type	Gender	Arousal and Valence							
		Fruits	Vegetables	Dairy	Fish	FastFood	Baked goods	Drinks	Meat
Considerate	Women	(-0.091; -0.1139)	(-0.0542; -0.2318)	(-0.0512; -0.1547)	(-0.1068; -0.1339)	(-0.0077; 0.5746)	(-0.0925; 0.0607)	(0.0023; -0.0993)	(0.0083; 0.5603)
	Men	(0.0006; 0.0111)	(-0.0004; -0.2104)	(-0.0237; 0.2132)	(-0.1362; 0.5423)	(0.0094; 0.0325)	(-0.0925; 0.0607)	(0.0164; 0.0532)	(0.0083; 0.5603)
Non-routine	Women	(-0.0585; -0.2748)	(-0.0388; -0.215)	(-0.0013; -0.0126)	-	-	(-0.0925; 0.0607)	(0.0126; -0.2291)	-
	Men	(-0.0721; -0.0991)	(-0.0880; -0.1592)	(0.0092; -0.0183)	-	(-0.0247; 0.3941)	(-0.0925; 0.0607)	(0.0318; -0.1415)	(0.0083; 0.5603)
Habitual	Women	(-0.0345; -0.1895)	(0.1527; 0.2632)	(0.0092; -0.0183)	(-0.0561; 0.3304)	(0.0094; 0.0325)	(-0.0925; 0.0607)	(0.0023; -0.0993)	(0.0083; 0.5603)
	Men	(-0.024; -0.2109)	(0.0209; -0.1066)	(0.0092; -0.0183)	(0.17; 0.2153)	(0.0094; 0.0325)	(-0.0925; 0.0607)	(0.0318; -0.1415)	-
Impulsive	Women	(-0.0424; -0.2402)	(0.013; -0.1912)	(0.0092; -0.0183)	(-0.0561; 0.3304)	(0.0094; 0.0325)	(-0.0925; 0.0607)	(0.0164; 0.0532)	-
	Men	(-0.0345; -0.1895)	-	(-0.0237; 0.2132)	(-0.0481; -0.055)	(0.0094; 0.0325)	(-0.0925; 0.0607)	(0.0318; -0.1415)	-

Source: own collaboration.

INFLUENCER MARKETING IN BRAND COMPETITIVENESS BUILDING (CASE OF BALTIC NATUR PARK)

Katarzyna WŁODARCZYK^{1*}, Agata GÓRSKA²

¹ University of Szczecin; katarzyna.wlodarczyk@usz.edu.pl, ORCID: 0000-0002-6020-8378

² AGENZA Agata Górską, Poland; biuro@agenzia.pl, ORCID: 0000-0001-5626-8928

* Correspondence author

Purpose: The objective of the paper is to assess the role of influencer marketing in effectively building and increasing brand competitiveness.

Design/methodology/approach: The paper was written on the basis of an analysis of the literature of the subject and it presents the case of Baltic Natur Park based in Niechorze, which employed the tools of influencer marketing to build the company's image and develop its brand on the market of tourist services in the coastal region, and which simultaneously managed to increase the competitiveness of its operations.

Findings: The implementation of influencer marketing in Baltic Natur Park has significantly affected brand development by increasing the quality and quantity of the orders the brand fulfilled. The results achieved by Baltic Natur Park demonstrate explicitly a positive assessment of influencer marketing in brand promotion.

Research limitations/implications: The analysis conducted further provides evidence that influencer marketing may constitute promotion not only of a brand itself, but also, when used in a broader scope, it may improve a region's competitiveness.

Practical implications: The study results are also a signal for all institutions and individuals, including managers, individuals managing a brand and a region, that the use of contemporary marketing tools for brand promotion, such as, inter alia influencer marketing, is an option worth considering.

Originality/value: The article presents a case study and can be an example and inspiration for other companies when taking innovative actions to build a competitive brand on the market. In addition, it can be used by scientists, business practitioners and students.

Keywords: marketing, influencer marketing, brand, competitiveness.

Category of the paper: research paper, case study.

1. Introduction

The diversity and the wealth of contemporary supply of goods and services forces companies to constantly compete in order to maintain their market position. Being competitive in relation to market rivals is a way for an organization to gain a competitive advantage. A competitive advantage on the contemporary market can, on the one hand, be ensured by the products and services offered, their functional properties, quality, price and brand, its perception and image among users. On the other hand, innovative activities spreading the knowledge about a company and its offer among potential buyers seem extremely important. The objective of this paper is to assess the role of influencer marketing in effectively building and increasing brand competitiveness. Therefore, an attempt was made to answer the question: whether and how influencer marketing can influence building and increasing the competitiveness of the brand?

The paper was written on the basis of an analysis of the literature of the subject and it presents the case of Baltic Natur Park based in Niechorze, which employed the tools of influencer marketing to build the company's image and develop its brand on the market of tourist services in the coastal region, and which simultaneously managed to increase the competitiveness of its operations. The paper features a description of the company's current operations related to influencer marketing as well as their results.

2. The significance of a brand for the competitiveness of an organization – theoretical aspects

Constant environment changes require the companies operating on the market and competing against one another to use many adaptive methods in order to maintain a competitive advantage. A competitive advantage allows an organization to achieve a significant, or even superior position in relation to its competitors, while at the same time it constitutes a result of the actions and strategies undertaken by a company in order to adapt to its clients' needs and expectations when offering specific products and services, better ones than those offered by competitors. A competitive advantage is given various definitions in the literature of the subject (Żabiński, 2000, p. 202; Moroz, 2003, p. 41). There is also no explicit view and classification of the factors that influence an organization's achievement of competitive advantage (Porter, 1990; Ma, 2000; Nowacki, 2015, pp. 446-462; Sołoducho-Pelc, 2016, p. 453; Nowacki, 2017, p. 155).

Organizations, in their long-term development strategies, try also to consider their long-term competitive advantage. They look for new, innovative, and at the same time efficient and effective ways, methods and tools that will enable them to raise their competitive position and competitiveness. The competitiveness of each enterprise results from market competition and it reflects the manner in which such an enterprise competes against other rivals. Similarly to the concept of a competitive advantage, in the case of competitiveness the literature provides multiple interpretations of that idea. Competitiveness may reflect a company's method of competing on the market, the ability to maintain its position on the market, the ability to grow, as well as the ability to benefit, to achieve profits and a competitive advantage (Zaorska, 1998; pp. 7-9; Abbas, 2000, p. 4; Nowacki, 2015; Szymanik, 2016; Kraszewska, Pujer, 2017, pp. 8-11).

When the competitiveness of an organization is analysed, the ability of supplying customers with goods and services they expect is doubtlessly an issue of importance, bearing in mind not only the application of such goods, but also the adaptation of such goods and services in terms of their quality, place and specific customers' requirements. When making final purchase decisions, buyers try to satisfy their needs and through shopping they try to overcome an unsatisfactory, to their minds, state of affairs (Schiffman, Wisenblit, 2015, p. 47). Simultaneously, the time spent on shopping, as well as the analyses of market offers of goods and services that precede the act of shopping ought to maximise the usefulness of the choice made. Consumers' behaviour is typically linked to the desire of satisfying one's needs, standing out against others, achieving a certain status, standard of living, or gaining prestige, relieving stress and using one's time in an optimal manner (Zalega, 2012, p. 26; Włodarczyk, 2013). Shopping behaviour is undertaken under the influence of various stimuli and it is shaped by multiple determinants. On the one hand, through market behaviour consumers fulfil their individual needs and wants, while on the other hand consumers are subjected to the influence of external factors. One of the factors that significantly shapes the behaviour of contemporary society is a brand (Solomon, 2006, p. 213; Schiffman, Wisenblit, 2015, p. 168).

According to P. Kotler (2006), a brand is not just a sign, a logotype, but it is also a promise and an assurance on the company's part that influences the strategy of its operations; a brand is perceived, in a nutshell, as communication between a company and its stakeholder. In the conditions of increasing competition and dynamic environment, building a strong and stable brand, one that is simultaneously perceived to be trustworthy by brand consumers, becomes a priority to those companies that wish to improve their competitiveness on the market. The following brand-building elements can be distinguished in companies' operations: customer brand loyalty; brand awareness; perception of brand quality by consumers; other customers' associations with a brand (i.e. brand image components) as well as other brand component properties (Witek-Hajduk, 2011, p. 52). Furthermore, wide-ranging marketing activities allow for brand value management (Doyle, 2003). The entirety of the operations conducted within the scope of brand value management is known as branding (Murphy, 1988).

Branding involves building a brand image and differentiating it against competitors as well as creating brand awareness among consumers. Relations with buyers are created through branding and at the same time the values that differentiate a brand are emphasised. Additionally, thanks to such activities, trust is built among customers and their loyalty is won (Kall, 2001; Urbanek, 2002, pp. 53-59; Kall, Kłeczek, Sagan, 2013, pp. 37-40; Skrzypek. Pinzaru, 2017; Kotarbiński, 2021).

The process of brand building is comprised of several stages occurring one after another. The first stage is an analytical one, the second stage – is conceptual, and the third stage – concerns implementation (Moroz, 2008, p. 37). During the first stage preliminary work on a brand is undertaken and the purpose of that stage involves defining internal and external communication conditions. As a result of the first stage a company's profile is specified along with the assumptions of a marketing strategy, and in particular the policy related to the brand, product range is planned, furthermore, competition and distribution capabilities are identified, a target group is determined. Therefore, the process of brand building starts with defining and approximating potential customers, developing a brand value and its mission. The second stage – a conceptual one, entails forming a brand identity, as well as creating its name and logotype. Brand identity is a form that the brand symbolizes. Within the scope of a brand identity it is possible to differentiate features and emotions that are assigned to the brand. The third stage – the one related to implementation, involves brand implementation and developing methods of brand presentation and communication strategy. The key components of that stage include: a logotype, an advertising slogan, and a colour scheme (Moroz, 2008, p. 37; Dolińska-Weryńska, 2015).

Therefore, as can be observed, a brand constitutes a significant marketing tool that an organization may use to build its competitive advantage. Effective activities related to branding enable developing a major company resource, and they constantly enhance the influence on customers' shopping behaviour. However, looking from the perspective of a contemporary consumer, a fairly substantial problem arises. Companies need to reach potential buyers in an effective manner through messages sent, but it is worth noting the fact that an average customer operates in a situation of information overload and has a broad range of products and services to choose from, which does not make decision-taking any easier. That is why organizations face a challenge of selecting a adopting communication channel for a potential customer. In this article the focus was placed on the role of marketing influencers in impacting buyers' behaviour as an important contemporary communication channel between an organization and a customer.

3. Influencer marketing

Influencer is a person who attracts a certain audience, people who trust the influencer, who share interests, and the relations that link them are strong enough for the recommendation of an influencer in a given group to be more effective than a low-budget advertising campaign (Kuczamer-Kłopotowska, Piekarska, 2018, p. 163). In the literature of the subject influencers are perceived as “influential opinion leaders who provide advantage over current promotional campaigns” (Wilusz, 2017, p. 251). In turn, seeking and promoting a brand by influencer in a given target group is called influencer marketing (Wilusz, 2017, p. 250).

In the process of brand promotion influencer marketing involves using the strength of an influencer’s impact on the influencer’s audience via electronic means of communication and encouraging them to shop for products and services (Jaskra, Gomoła, Werenowska, 2019). Three types of influencers can be distinguished within the scope of influencer marketing (Wilusz, 2017):

- a) nanoinfluencers – they attract fewer than 1000 followers in their social media channels, they gather around a rather small audience and the definition usually encompasses individuals known in a given region,
- b) microinfluencers – they have between 1000 and 100 000 followers in their social media channels, they use effective hashtags, they have a defined group of target audience and they know very well how to communicate with it, they reply to messages and comments on their own,
- c) celebrities and megainfluencers – social media superstars, they are people who have more than a million followers in their social media channels, they are public figures liked by most of the public. Musicians, politicians, actors, sportspeople and celebrities dominate in that group.

Brands can choose among the influencers who enjoy substantial popularity and trust among followers and undertake cooperation with them in the capacity of the so-called brand ambassadors. A brand ambassador is a person who thanks to their recognisability increases both the recognisability and sales of products or services of a brand. A brand ambassador ought to identify with the brand, through their appearance, behaviour, values and ethics. Through long-term cooperation with an influencer, a brand strengthens its relations with customers, and in the era of information society any actions related to influencer marketing gain in importance (Jin, Muqaddam, Ryu, 2019). Influencers are an opportunity for strengthening brand image, they effectively affect their followers by sending messages to potential customers (Tworzydło, Życzyński, Wajda, 2019).

According to the literature of the subject, several stages of influencers' activities can be distinguished. In the initial stage they inspire their audience and provide information about a brand. The second stage involves customers' deliberations and shopping decisions, followed by the third stage – a shopping reaction, which ought to be satisfactory to the customer (Stubb, Nystrom, Colliander, 2019).

As already mentioned, influencer marketing has been constantly gaining in importance. According to Influencer Marketing Benchmark, the value of the marketing influencer sector by the end of 2021 grew to 13.8 billion dollars in relation to 9.8 billion figure of the previous year (www.influencermarketinghub.com). The Nielsen Company, a global research company based in New York, forecasts that in 2022 the value of the marketing influencer sector will exceed 15 billion dollars (www.nilsen.com).

Cooperation with influencers provides a chance for strengthening brand image and value, it brings many benefits, including above all: activating followers in the social media, increasing followers' involvement, creating authentic content, increasing trust in the brand and its products, establishing contacts with the audience during various mass events (e.g. a fashion show, fairs), reaching a target group quickly and precisely (a brand ambassador), creating brand image and value through values (a brand ambassador), promoting a brand as innovative and modern, increasing brand authenticity, ensuring increased liking of the company and greater trust in brand services and products (Stopczyńska, 2018).

4. Baltic Natur Park – case study¹

For the purpose of this paper, in order to demonstrate the effectiveness of influencer marketing in raising brand competitiveness, an analysis of Baltic Natur Park company operations based in Niechorze in the West Pomeranian Province was presented.

Baltic Natur Park is a comfortable resort located in Niechorze on the coast. The brand has been operating on the market in the tourist sector since 2018. Its houses and apartments with a park view are located next to Lake Liwia Łuża nature reserve. The resort occupies the surface of 13 000 m². The main offer comprises: accommodation and relaxation close to nature, which also features a fishing pond, a heated swimming pool, a wellness and spa zone, places of relaxation giving opportunity of bird watching and nature reserve observation, a playground, a beach volleyball court, a bike and quad rental, a café and drink bar, a mini zoo. The main brand values include: celebrating slow life, sustainable development, contact with nature as well as healthy and active lifestyle.

¹ Elaborated on the basis of the data provided by Baltic Natur Park and Agenza.

For the purposes of the study the following activities of Baltic Natur Park were specified for analysis:

- assessment of the outreach that Baltic Natur Park brand had in its social media channels prior to using influencer marketing, during its course and after concluding cooperation with influencers,
- assessment of advantages and disadvantages of employing influencer marketing in the operations of Baltic Natur Park resort.

The analysis was conducted for the period of 2020-2022. The analysis took into consideration data from social media channels as well as the number of visitors to the website of Baltic Natur Park brand, which was using influencer marketing in the period lasting from 01.01.2021 to 31.12.2021 in order to promote the brand and the region. The obtained results were compared to analogous data from the periods before influencer marketing was used (year 2020) and after it was concluded (year 2022).

As was previously mentioned, the brand of Baltic Natur Park has existed since 2018. It started cooperating with a marketing agency Agenza from Gryfice in the West Pomeranian Province in 2020. Before commencing the cooperation with the agency, Baltic Natur Park used to run channels in the social media through which it communicated with its customers. The most frequently selected forms of marketing included: paid promotional advertising in the social media, SEO positioning and outbound marketing in the summer season. The first step of the cooperation undertaken with the specialized marketing agency involved specifying more precisely the brand profile. It was assumed that the profile would remain unchanged during and after the period of using new tools of brand building and promotion. Moreover, it was agreed that the services rendered by the brand would be of premium quality. It was established that influencer marketing would be a new instrument of promoting the brand of Baltic Natur Park. Following that, the method of selection of influencers for cooperation and brand promotion was examined. The choice of influencers was made by Agenza marketing agency on the basis of an analysis of the Chief Statistical Office's data regarding changes in the demand for tourist services (for 2016-2020) and the agency's own study regarding changes in the structure and hierarchy of consumers (study from 2018, 2019). According to the agency's study it was found that a group of target clients for Baltic Natur Park brand include people interested in aesthetic impressions, following fashion, valuing brand products and quality and being sensitive to opinions about themselves. 721 influencers replied to the agency's advertisement for the promotion of Baltic Natur Park brand. Out of that group six influencers were chosen, and eventually cooperation was proposed to four of them. The criteria for choosing influencers required cohesion between brand values and influencers, as well as the brand profile (content) (Table 2). The following influencers decided to cooperate with Baltic Natur Park brand in 2021:

- Gosia Kurek – a representative of high-quality products, of healthy life style and nutrition, an expert on the subject in a morning TV programme „Pytanie na Śniadanie” (“A question for breakfast”), who runs an Instagram profile: gohfitfan (had the outreach of 15 200 thou. followers in 2021);
- Katarzyna Węgrzyn – a bestseller author of “Gdzie w Polsce na weekend” (“Where to go in Poland for a weekend”), a connoisseur of interesting, high-end and niche locations in Poland, who has an Instagram profile: gdziewpolscenaweekend (with an outreach of 90 000 followers in 2021);
- Tomasz Torres – a drummer of Afromental band, with an Instagram profile: tomektorres (37 500 followers in 2021) with his wife Paulina (Instagram profile: pinalaba - 27 200 followers), who create profiles promoting a healthy lifestyle, quality products, living in harmony with nature, work-ideal-balance. They are finalists of “The Power Couple” programme and ambassadors of “Poznaj Polskę” (“Get to know Poland”) campaign - travelist.pl - 2021.
- the Lastowicz spouses – trip advisors – Izabela and Grzegorz, who created an Instagram account: lastowicze - (47 300 followers in 2021); winners of the best Rainbow partner statue in 2021, Starway’21 Tourism Award - 2021.

Inviting influencers to cooperate with Baltic Natur Park brand in 2021 changed the marketing techniques employed by the company (Table 1), but at the same time it enabled maintaining the company profile adopted since its beginning. The company continued to operate in the areas of: catering, accommodation and comfortable relaxation, promoting slow life, healthy life style, healthy food, work-life balance and contacts with nature.

Table 1.

Marketing techniques used by Baltic Natur Park brand in 2020-2022

Marketing techniques	Before using influencer marketing Year 2020	During cooperation with influencers Year 2021	After ending influencer marketing Year 2022
Optimization of the website SEO	Yes	Yes	Yes
Running social media	Yes	Yes	Yes
Branding	Yes	Yes	Yes
Marketing outbound	Yes	No	No
Paid promotion in the social media	Yes	No	No

Source: elaboration on the basis of the data provided by Agenza.

The cooperation with the influencers was at its core based on the fact that the brand was running the same profile of activity both before using influencer marketing, during and after concluding cooperation with the influencers. Moreover, the services rendered were maintained at a premium level. It is worth emphasising that during the examined period, along with the restrictions related to the COVID 19 pandemic (year 2020) and the transfer of many planes of activity into the virtual world, by using influencer marketing (year 2021) the brand noted a record number of orders and new followers in the social media. Furthermore, alongside the development of cooperation with influencers, the brand opened up to not just new marketing techniques, but it also initiated B2B cooperation.

Outreach is an important indicator of any marketing activity conducted on-line. Outreach constitutes a total number of viewers of a website or particular content (a post) in a given social media channel. This indicator demonstrates the number of individuals whom a given profile or a mentioned post has reached. The increase in the outreach of Baltic Natur Park brand in the social media channels in 2021, taking into account the periods during which influencer marketing was applied, is presented in Table 2.

Table 2.

Monthly outreach of Baltic Natur Park in selected social media channels in 2021, indicating the periods during which influencer marketing was used

Year 2021	Outreach on Facebook (number of individuals)	Outreach on Instagram (number of individuals)	Description of the effects of the activities undertaken by the marketing agency for Baltic Natur Park
January	72 400	330	Development of the company profile on Facebook Development of the company profile on Instagram
February	162 400	599	Development of the company profile on Facebook Development of the company profile on Instagram
March	184 300	615	Development of the company profile on Facebook Development of the company profile on Instagram
April	93 100	638	Development of the company profile on Facebook Development of the company profile on Instagram
May	115 000	996	Development of the company profile on Facebook Development of the company profile on Instagram
June	236 200	7500	Development of the company profile on Facebook Development of the company profile on Instagram Influencer marketing (Gosia Kurek - Pytanie na Śniadanie; Gdzie w Polsce na Weekend Katarzyna Węgrzyn)
July	31 200	1100	
August	191 900	2200	Development of the company profile on Facebook Development of the company profile on Instagram Influencer marketing (Tomek and Paulina Torres; Lastowicze Izabela and Grzegorz Kałb-Sieleccy)
September	154 100	2900	Development of the company profile on Facebook Development of the company profile on Instagram
October	7 000	900	Development of the company profile on Facebook Development of the company profile on Instagram
November	9 100	556	Development of the company profile on Facebook Development of the company profile on Instagram
December	76 400	1200	Development of the company profile on Facebook Development of the company profile on Instagram

Source: elaboration on the basis of the data provided by Agenza.

The results of the use of influencer marketing by Baltic Natur Park brand may be presented not just on the basis of schedules of its outreach in social media channels, but also on the basis of the outlays made on additional advertising. And so, in the presented company in 2020 before influencer marketing was used, average monthly outlays on advertising were relatively high. In 2021, when Baltic Natur Park initiated its cooperation with influencers, and when the number of followers rose substantially, additional monthly expenditure on advertising was only 10% of the amount spent the year prior. In 2022, despite already concluded cooperation with existing influencers, the number of Baltic Natur Park followers in the social media grew, while advertising spending increased to 20% of the amount of 2020.

The use of modern brand promotion tools additionally affects a rise in the number of website visitors. In the case of Baltic Natur Park the employment of influencer marketing was further reflected in the number of the company's site views (figure 1).

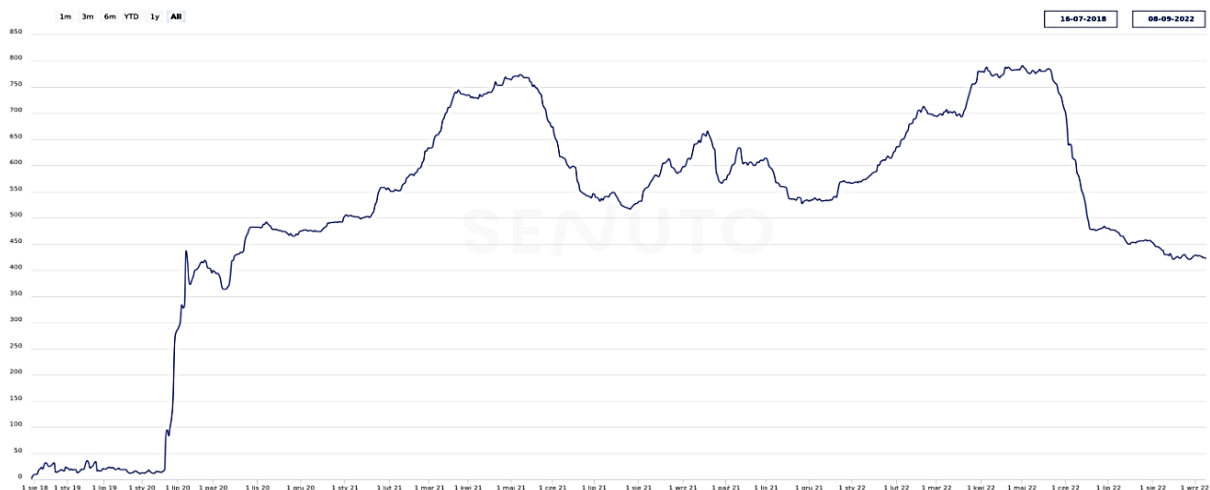


Figure 1. Number of views of Baltic Natur Park brand site between July 2018-September 2022.

Source: elaboration on the basis of the data provided by Agenza.

On the grounds of the data presented in figure 1, an increased interest in Baltic Natur Park websites can be observed during the months when influencer marketing was being employed. However, it is worth adding that, when the interest in the company's website was observed, one could notice that interest to have been growing since early 2020. After the first two years of independent operations, the company decided to take advantage of the assistance of a specialized marketing agency. From the start of the cooperation with Agenza not only did the number of visits to the website increased, but so did the previously mentioned outreach. Table 3 contains individual tools that were employed by the marketing agency for the promotion of Baltic Natur Park brand since 2020 and the stage of shaping the present brand, demonstrating at the same time the change in its outreach on Facebook and Instagram.

Table 3.

Stages of shaping Baltic Natur Park brand in the years of 2020-2022 and the change in its outreach on Facebook and Instagram

Stage	Cooperation with Agenza – actions undertaken for brand building	Outreach on Instagram (number of individuals)	Outreach on Facebook (number of individuals)
Stage I – year 2020	Cooperation initiation 04.2020 rebranding <ul style="list-style-type: none"> • making the image more cohesive in brand components • company papers • website – change and development • logotype • visual identification • social media channels • creation of a target group • development of company fan page on Facebook - 08.2020 	113 000	0
Stage II – year 2021	<ul style="list-style-type: none"> • running the social media • running the company’s website • branding services • cooperation with influencers 	889 400	13 400
Stage III – year 2022	<ul style="list-style-type: none"> • running the social media • running the company’s website • branding services • cooperation with influencers 	1 000 000	40 000

Source: elaboration on the basis of the data provided by Agenza.

On the basis of the information featured in Table 3, it may be concluded that conducting influencer marketing for the purpose of brand promotion must be preceded by other steps, which in time will enable comprehensive promotion of a cohesive brand image. The second crucial conclusion is the fact that the introduction of influencer marketing alone will not yield the desired results if it is not consistent with the operations previously conducted by a company with respect to brand promotion. Yet another issue that seems of importance in the case of implementing influencer marketing regards consistency and repeatability of the activities undertaken in that respect.

A schedule of the data for the years of 2020-2022 for Baltic Natur Park demonstrates a gradual increase in the brand’s outreach and its competitiveness. Thereby, it was confirmed that the employment of modern marketing techniques is justified and necessary for the purpose of brand promotion and improvement of its competitiveness. The analysis of the data additionally enables presenting the strengths and weaknesses that influencer marketing involves in the process of branding. Its advantages include improvement of the brand outreach in social media channels in a relatively short time, with relatively lower financial outlays made on other, less effective forms of promotion. A disadvantage of influencer marketing, considering the experience of the described brand, in Baltic Natur Park chiefly involved technical problems related to the organization and implementation of a new tool, and thereby the need to entrust such types of activities to a professional company, having the experience of such operations on the market.

5. Summary and conclusions

The implementation of influencer marketing in Baltic Natur Park has significantly affected brand development by increasing the quality and quantity of the orders the brand fulfilled. The results achieved by Baltic Natur Park demonstrate explicitly a positive assessment of influencer marketing in brand promotion. The analysis conducted further provides evidence that influencer marketing may constitute promotion not only of a brand itself, but also, when used in a broader scope, it may improve a region's competitiveness. The study results are also a signal for all institutions and individuals, including managers, individuals managing a brand and a region, that the use of contemporary marketing tools for brand promotion, such as, inter alia influencer marketing, is an option worth considering. An important indicator is the fact that organizations wishing to develop should also open up to cooperation with external marketing-branding agencies, specialized in that regard, benefiting from their experience and giving them freedom to act.

References

1. Abbas, A.J. (2000). Rethinking competitiveness. *Advances in Competitiveness Research*, no. 8.
2. Dolińska-Weryńska, D. (2015). Branding emocjonalny w zarządzaniu wartością marki. *Zeszyty Naukowe Politechniki Śląskiej, Seria: Organizacja i Zarządzanie*, z. 85, Nr kol. 1943.
3. Doyle, P. (2003). *Marketing wartości*. Felberg.
4. Jaskra, E., Gomoła, B., Werenowska, A. (2019). Wykorzystanie influencer marketingu w kreowaniu wizerunku marki. *Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing*, 21, pp. 56-67.
5. Jin, S.V., Muqaddam, A., Ryu, E. (2019). Influencer marketing and modern phenomenon creating. *Marketing Intelligence and Planning*, 5, pp. 567-579.
6. Kall, J. (2001). *Silna marka. Istota i kreowanie*. Warszawa: PWE.
7. Kall, J., Kłeczek, R., Sagan, A. (2013). *Zarządzanie marką*. Warszawa: Wolters Kluwer.
8. Kotarbiński, J. (2021). *Marka 5.0. Człowiek i technologie: jak tworzą nowe wartości?* Warszawa: PWN.
9. Kotler, Ph. *The New marketing and sales-strategies and tactics*. XIX Seminar of the Series Authorities, 17.05.2006.
10. Kraszewska, M., Pujer, K. (2017). *Konkurencyjność przedsiębiorstw. Sposoby budowania przewagi konkurencyjnej*. Wrocław: Exante.

11. Kuczamer-Kłopotowska, Piekarska (2018). *Realizacja funkcji influencer marketingu w opinii influencerów oraz ich followersów*.
12. Ma, H. (2000). Competitive advantage and firm performance. *Competitiveness Review: An International Business Journal*, vol. 10, no. 2, pp. 15-32.
13. Moroz, A. (2008). Jak tworzy się marki? Praktyczne wskazówki dotyczące procesu kreacji marki. *Przegląd Organizacji*, Nr 3(818), pp. 35-38.
14. Moroz, M. (2003). Konkurencyjność przedsiębiorstwa – pojęcie i pomiar. *Gospodarka Narodowa*, 9, 40-57.
15. Murphy, J. (1988). Branding. *Marketing Intelligence & Planning*, Vol. 6 No. 4, pp. 4-8, <https://doi.org/10.1108/eb045775>.
16. Nowacki, R. (2015). Diagnoza poziomu konkurencyjności przedsiębiorstw w Polsce. *Handel Wewnętrzny*, 5, 446-462.
17. Nowacki, R. (2017). Kreowanie przewagi konkurencyjnej w przedsiębiorstwach usługowych. *Marketing i Zarządzanie*, 1(47), pp. 153-162.
18. Porter, M.E. (1990). The competitive advantage of notions. *Harvard Business Review*, vol. 68, no. 2, pp. 73-93.
19. Schiffman, L.G., Wisenblit, J.L. (2015). *Consumer Behavior*. Essex: Pearson.
20. Skrzypek, E., Pinzaru, F. (2017). Marka jako ważny element marketingu. *Zeszyty Naukowe Uniwersytetu Przyrodniczo-Humanistycznego w Siedlcach. Administracja i Zarządzanie*, 41, 114, pp. 197-210.
21. Sołoducho-Pelc, L. (2016). Przewaga konkurencyjna – główne trendy badawcze. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, nr 444, pp. 422-433.
22. Solomon, M.R., (2006). *Zachowania i zwyczaje konsumentów*. Gliwice: Helion.
23. Stopczyńska, K. (2018). Wykorzystanie influencer marketingu w kreowaniu relacji z klientami Y. *Studia Oeconomica Posnaniensia*, 5, pp. 104-115.
24. Stubb, C., Nystrom, A.G., Colliander, J. (2019). Influencer marketing. *Journal of Communication Management*, 2, pp. 109-122.
25. Szymanik, E. (2016). Konkurencyjność przedsiębiorstwa – główne aspekty. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, nr 5(953), pp. 107-124.
26. Tworzydło, D., Życzyński, N., Wajda, N. (2019). Influencerzy jako wsparcie dla kampanii Public Relations. *MINIB*, 1, pp. 131-150.
27. Urbanek, G. (2002). *Zarządzanie marką*. Warszawa: PWE, pp. 53-59.
28. Wilusz, R. (2017). *Influencer Marketing potężny ponad miarę. Marketing® Evolution. Nowe techniki, pomysły, rozwiązania*. Oficyna wydawnicza Politechniki Rzeszowskiej.
29. Witek-Hajduk, M.K. (2011). *Zarządzanie silną marką*. Warszawa: Oficyna a Wolters Kluwer Business.
30. Włodarczyk, K. (2013). *Rynkowe zachowania polskich konsumentów w dobie globalizacji konsumpcji*. Toruń: Adam Marszałek.
31. www.influencermarketinghub.com, 29.12.2021.

32. www.nilsen.com, 29.12.2021.
33. Żabiński, L. (2000). *Przewaga konkurencyjna*. Warszawa: PWE.
34. Zalega, T. (2012). *Konsumpcja. Determinanty, teorie, modele*. Warszawa: PWE.
35. Zorska, A. (1998). Strategie korporacji transnarodowych w Polsce. *Przeгляд Organizacji*, no. 2.

EVOLUTION OF THE USE OF SOCIAL MEDIA BY THE LOCAL GOVERNMENTS OF THE ŁÓDZKIE VOIVODSHIP

Mariusz WOŹNIAKOWSKI

University of Lodz, Faculty of Management; mariusz.wozniakowski@uni.lodz.pl,
ORCID: 0000-0001-6423-5309

Purpose: The aim of the article is to present changes in the use and basic advantages of social networks in communication of local government units on the example of cities in the Lodz voivodeship.

Design/methodology/approach: The study consisted in analysing the content of the official websites belonging to the local governments of the individual cities of the Łódzkie Voivodeship in order to see how information on the social networks used (location of plug-ins) is made available and a review of active profiles on these sites was carried out in order to diagnose what content is published. The survey was conducted in December 2022. The results were cross-referenced with the corresponding survey carried out in 2019 and 2020. Translated with www.DeepL.com/Translator (free version).

Findings: The study showed that out of the 44 cities analysed in the Łódzkie Voivodeship, 42 use at least one social networking site. The most common is Facebook - 42 cities have a profile, followed by YouTube - 25, Instagram - 14 and Twitter 7. 3 cities have profiles on 4 sites at the same time, 11 have 3 official profiles on different social networking sites, while another 15 cities have 2 and 13 have one each. For 2 cities, no profiles were found on social networks. The content and frequency of publication on the profiles varies. Translated with www.DeepL.com/Translator (free version).

Research limitations/implications: The study did not take into consideration social networks which were less popular at the time of writing (e.g. TikTok - among the cities surveyed, only Łódź has an official profile there). The objectives of the communication activities of individual cities are not known. This may be part of further research through in-depth interviews with those responsible for promoting the cities. It is also possible to extend the research to cities of other voivodships and among the target recipients of communication activities in particular sites.

Practical implications: On the basis of the author's audit of the communication activity of cities in the Łódzkie Voivodeship on social networking sites, this article suggests that the use of social media is an appropriate tactic in cities' communication, both in the external promotional dimension and in communication with citizens due to the participatory, interactive and open nature of social media.

Originality/value: The publication presents the results of research carried out on the basis of the author's audit of the activity of the cities of the Lodz voivodship in the social media.

Keywords: social media, city marketing, city promotion, marketing communication.

Category of the paper: Research paper.

1. Introduction

Social networks have been known for a long time, but it is only the virtual space and available online applications that have allowed them to flourish and be used for business, social and political purposes. Thus, social networks using social networks as organisational and communication platforms have become social networks (Papińska-Kacperek, Polańska, 2016). The continuously improving ICT (Information and Communication Technologies) infrastructure and the increasing use of technology has changed the way modern communication is conducted interpersonally and, consequently, commercially. Public administration could not overlook the new solutions that have been improving the work of commercial institutions for years. Websites such as Facebook, YouTube have become popular in the daily lives of citizens, as well as cities (as local government units) in their contact with citizens via the Internet. A developed ICT infrastructure as well as a high Internet penetration in society are prerequisites to ensure that a large number of citizens are able to use social media and other online communication channels. Both of these factors can be found in the concept of 'Informational Word Cities' (Stock, 2011; Mainka, Khveshchanka, Stocka, 2011). Informational cities consist of two spaces: the space of places and the space of flows. The space of places (i.e. buildings, streets) is dominated by the space of flows (e.g. money, power, information). Such cities are the metropolises of the 21st century, following on from Manuel Castells' concept of 'Information Cities' (Castells, 1989). "World city" (Word City) is defined by the degree of "urbanness" (Friedmann, 1995; Taylor, 2004; Sassen, 2001), where a large population does not necessarily constitute an information city. However, ICT infrastructure should be developed to ensure that cities meet the needs of the space typical of an information city. On this occasion, other terms related to the development of ICTs in relation to cities such as digital city (Yigitcanlar, Han, 2010), smart city (Shapiro, 2006; Hollands, 2008; Jonek-Kowalska and Wolniak, 2019), knowledge city (Ergazakis, Metaxiotis, Psarras, 2004), or creative city (Landry, 2005; Florida, 2005).

In view of the above, the use of social media in public relations is becoming an important element of cities' communication strategies. The city's communication, mainly with regard to promotional aspects, has an integrative, stimulating and competitive function. The integrative function refers to the local community and aims to strengthen the bonds between the people of a region. The stimulating function serves to increase the degree of identification with the territory under consideration. The last function relates to competition for external funds, investors, tourists, etc. Skilful social networking profiles can contribute to the emergence of a kind of community of residents acting in the name of the general good. In addition, it is an opportunity to inform residents about the activities of local authorities in a non-invasive way, and thus a valuable source of information and another element for building an information society (Koszembar-Wiklik, 2013; Woźniakowski, 2015). Therefore, the aim of this article is to present the changes in the use and the basic advantages of social networks in the communication of local government units on the example of cities in the Łódzkie Voivodeship.

2. Principles of social media in cities' communication

A social networking site can be defined as a site aimed at a specific social group or people with similar interests. These sites allow quite a lot of interference by their users in its content and nature (Rzepecki, Hankus-Matuszek, 2009). What is their strength is that visitors to profiles are not fully aware that behind the eye-pleasing graphics, catchy texts under which they press the "Like!" button, there is (or at least there should be) a carefully laid out, well-thought-out plan of action down to the smallest detail, which assumes the opportunities, threats and potential benefits of each message, i.e. a network of efficiently selected facts and conclusions (Woźniakowski, 2015). The skilful use of social networks in marketing communication can result in the fact that by sending out messages, the organisation - the city - can build lasting relationships with its audience - the inhabitants (or other stakeholders, e.g. tourists, investors), which will not end with the action carried out (Rak, 2011). This means that a well-created, credible message will be perceived positively by the environment and will be further replicated by the recipients. In addition, informal communication between audiences proves to be much more effective than conducting standard promotional activities (Brunk, 2010).

In a broad sense, social media is a major area of marketing innovation in the promotional strategies of cities and regions (Łopacińska, 2014). Image creation through social media has become an obligation for dynamically developing cities. Positioning the image of a modern and innovative city is not possible without the conscious use of these communication channels. Exemplary communication in social media should be:

- informal (being closer to local people),
- emotional (based not only on information but also on language),
- interactive (rich in images and videos that shape the image),
- engaging (based on dialogue with users),
- problem-solving (faster, simpler and less bureaucratic).

Looking at cities' communication through social networks, three styles of stakeholder dialogue can be defined. These have been named metaphorically, highlighting their most important characteristics: "announcement pole", "hotline" and "discussion club" (Annusewicz, 2019). The first style - the 'announcement pole' - is the least participatory form of dialogue. It is characterised by a focus on the realisation of the information function of the communication carried out and is implemented in the formula of one-way communication, focused on broadcasting and not interested in feedback. The characteristics of this style are (Annusewicz, 2019):

- a small number of observed accounts of other users, predominantly local government institutions, local politicians, other local government units and public administration entities,
- lack of any interaction with other users,

- sharing and adding to liked posts of only other local government entities, possibly media representatives,
- publication of posts of a purely informative nature.

The second style, 'hotline', is characterised by:

- a relatively large number of observed accounts, although those observed outside the city's subordinate institutions include mainly local journalists, activists, politicians,
- reactive interactions, replying to comments that mention the user's name directly,
- publishing mostly informative posts.

The last of the communication styles - the most intensive and to the greatest extent allowing it to be called participatory in the sense of the essence of communication - is the format metaphorically called 'discussion club'. It is characterised by:

- a large number of followed accounts, among which a significant group are residents, people identifying themselves with the city/municipality,
- proactive (also reactive) interactions involving participation in discussions on a given social network not only when they are somehow related to the city, but also when they go beyond the subject of a given locality,
- with a high number of likes and shares for posts made by individual, not widely known users of a given site,
- engaging content of posts,
- broad reactions to comments.

It is important to remember that social media combines vertical communication and horizontal communication (Brzustewicz, 2014). This means that communication is not only based on the contact between the company (in this case the city) and the users (stakeholders), but also has the dimension of exchanging experiences directly between the audience. A city with an active social media presence should observe, learn from and respond to the needs of its inhabitants.

3. Social networks used by the cities of the Lodz region

The study consisted in analysing the content of official websites belonging to local governments of individual cities in Łódzkie Voivodeship from the point of view of checking how information on the social networks used is communicated (the location of plug-ins) and the profiles themselves in these media in order to see what is published and how. In the absence of a link on the website to the most popular social network, Facebook, such a profile was searched for through the portal's internal search engine. In the case of other sites, profiles with no direct links on the cities' websites were not taken into account, although a few profiles were

identified through search engines (YouTube - Brzeziny, Drzewica, Łowicz, Pajęczno; Instagram - Drzewica, Łowicz, Pabianice, Radomsko, Tomaszów Mazowiecki, Zgierz; Twitter - Bełchatów, Piotrków Trybunalski, Wieluń), but due to the information contained in the profiles, in most cases it is not possible to verify whether they are official profiles of the cities.

The survey was carried out in three stages: in October 2019 and 2020 and in December 2022. This made it possible to observe changes in the use of the various portals, as well as in the way they communicate. Particular attention was paid to what and how was communicated on the cities' profiles in the period before the pandemic (2019), during the pandemic (2020), as well as after the announcement of its end (2022). Year-on-year percentage changes were also indicated for basic information about the profiles themselves, such as the number of users following a profile or the number of publications.

The analysis showed that out of the 44 cities analysed in the Łódzkie Region, 42 use at least one social networking site. This is most often Facebook - 42 cities have a profile, followed by YouTube - 25, Instagram - 14 and Twitter - 7. 3 cities have profiles on 4 sites at the same time, 11 have 3 official profiles on different social networking sites, while another 15 cities have 2 and 13 have 1 profile each. For 2 cities, no profiles were found on social networks. Tables 1-4 show which cities have their own profiles on each site, together with the number of fans and/or publications and/or impressions in October 2019 and 2020 and December 2022.

Table 1.

Facebook in the communication of cities in the Łódź Voivodship - comparison of basic information - as of October 2019 and 2020 and December 2022

No.	City	Number of users following 2019	Number of users following 2020	Number of users following 2022	Change YOY 2019-2020	Change YOY 2020-2022
1	Aleksandrów Łódzki	9450	10990	14877	14%	26%
2	Bełchatów	14333	15674	18484	9%	15%
3	Biała Rawska	-	-	-	-	-
4	Błaszki	-	1117	1200	-	7%
5	Brzeziny	3405	4009	5400	15%	26%
6	Drzewica	2136	2705	3700	21%	27%
7	Działoszyn	-	-	2100	-	-
8	Głowno	4524	5702	7400	21%	23%
9	Kamieńsk	32	75	139	57%	46%
10	Koluszki	4631	5868	7225	21%	19%
11	Konstantynów Łódzki	8879	10061	12156	12%	17%
12	Krośniewice	995	1301	2000	24%	35%
13	Kutno	12636	13447	14000	6%	4%
14	Łask	2700	3184	4800	15%	34%
15	Łęczyca	2922	3270	4447	11%	26%
16	Łowicz	10983	11597	12912	5%	10%
17	Łódź	344261	368328	459000	7%	20%
18	Opoczno	3902	4642	6300	16%	26%
19	Ozorków	-	2313	3300	-	30%
20	Pabianice	2554	2906	3600	12%	19%

Cont. table 1.

21	Pajęczno	-	1307	2200	-	41%
22	Piotrków Trybunalski	8386	8971	10000	7%	10%
23	Poddębice	571	860	1600	34%	46%
24	Przedbórz	-	-	1500	-	-
25	Radomsko	4729	5413	7684	13%	30%
26	Rawa Mazowiecka	3469	4173	5980	17%	30%
27	Rzgów	-	1195	2256	-	47%
28	Sieradz	4493	5907	8450	24%	30%
29	Skierniewice	15670	17173	19000	9%	10%
30	Stryków	1914	2876	4700	33%	39%
31	Sulejów	2481	3475	5500	29%	37%
32	Szadek	229	556	1000	59%	44%
33	Tomaszów Mazowiecki	11277	13288	14891	15%	11%
34	Tuszyn	-	-	-	-	-
35	Uniejów	5672	6354	7800	11%	19%
36	Warta	1689	2965	5300	43%	44%
37	Wieluń	11189	12110	13000	8%	7%
38	Wieruszów	3483	4768	6200	27%	23%
39	Wolbórz	1717	1928	2700	11%	29%
40	Zduńska Wola	5830	6311	7600	8%	17%
41	Zelów	1842	2538	4100	27%	38%
42	Zgierz	11535	13219	16412	13%	19%
43	Złoczew	4372	5021	6500	13%	23%
44	Żychlin	3652	3944	4500	7%	12%
Total (number of profiles)		36	40	42	10%	5%

Source: own research.

Table 2.

Youtube in the communication of cities in the Łódź Voivodship - comparison of basic information - as of October 2019 and 2020 and December 2022

No.	City	Number of views of the most popular video 2019	Number of views of the most popular video 2020	Number of views of the most popular video 2022	Channel subscriptions 2019	Channel subscriptions 2020	Channel subscriptions 2022	Change YOY 2019-2020	Change YOY 2020-2022
1	Aleksandrów Łódzki	126984	13154	88795	671	896	1210	34%	35%
2	Bełchatów	255605	273325	301632	644	693	810	8%	17%
11	Konstantynów Łódzki	1037	-	598	24	0	92	-100%	-
13	Kutno	-	-	1435	-	-	101	-	-
15	Łęczyca	10016	10096	10146	65	70	72	8%	3%
17	Łódź	-	-	1058650	-	-	5690	-	-
18	Opoczno	10833	12864	16105	451	695	919	54%	32%
19	Ozorków	9288	9769	13298	545	792	1070	45%	35%
22	Piotrków Trybunalski	-	567398	668275	-	3750	5750	-	53%
25	Radomsko	18066	19735	20736	138	185	218	34%	18%
26	Rawa Mazowiecka	-	-	6558	-	-	164	-	-
27	Rzgów	-	-	3147	-	-	99	-	-
29	Skierniewice	6218	16823	17690	287	461	569	61%	23%
30	Stryków	7048	7437	7919	255	305	326	20%	7%
31	Sulejów	-	-	117080	-	-	733	-	-

Cont. table 2.

33	Tomaszów Mazowiecki	51174	79259	88564	387	516	673	33%	30%
35	Uniejów	761	11506	34458	26	28	99	8%	254%
36	Warta	1589	1958	9395	21	33	83	57%	152%
37	Wieluń	38157	44332	54777	136	149	189	10%	27%
38	Wieruszów	2892	9051	10668	47	72	95	53%	32%
39	Wolbórz	8588	9852	1944	20	24	54	20%	125%
40	Zduńska Wola	331	107565	116453	80	283	316	254%	12%
41	Zelów	2083	2673	33520	65	105	331	62%	215%
42	Zgierz	17564	19399	48980	238	285	1020	20%	258%
44	Żychlin	3764	3866	4137	46	61	92	33%	51%
Total (number of profiles)					19	19	25	0%	32%

Source: own research

Table 3.

Instagram in the communication of cities in the Łódź Voivodship - comparison of basic information - as of October 2019 and 2020 and December 2022

No.	City	Number of posts in 2019	Number of posts in 2020	Number of posts in 2022	Change YOY 2019-2020	Change YOY 2020-2022	Number of followers 2019	Number of followers 2020	Number of followers 2022	Change YOY 2019-2020	Change YOY 2020-2022
1	Aleksandrów Łódzki	-	-	193	-	-	-	-	1039	-	-
2	Bełchatów	-	-	419	-	-	-	-	1315	-	-
8	Główno	-	-	174	-	-	-	-	933	-	-
11	Konstantynów Łódzki	150	1	231	-99%	23000%	900	305	782	-66%	156%
13	Kutno	-	-	417	-	-	-	-	3257	-	-
17	Łódź	3596	4782	6487	33%	36%	62800	78700	103643	25%	32%
28	Sieradz	62	94	230	52%	145%	481	675	1010	40%	50%
29	Skierniewice	505	773	1998	53%	158%	2444	3185	4610	30%	45%
31	Sulejów	-	-	61	-	-	-	-	585	-	-
35	Uniejów	-	-	441	-	-	-	-	1969	-	-
37	Wieluń	73	77	82	5%	6%	2658	2813	2846	6%	1%
38	Wieruszów	72	79	117	10%	48%	266	498	777	87%	56%
43	Złoczew	259	259	259	0%	0%	500	512	520	2%	2%
44	Żychlin	-	-	1	-	-	-	-	2	-	-
Total (number of profiles)							7	7	14	0%	100%

Source: own research.

Table 4.

Twitter w komunikacji miast województwa łódzkiego – porównanie podstawowych informacji - stan na październik 2019 i 2020 oraz grudzień 2022 roku

No.	City	Number of tweets 2019	Number of tweets 2020	Number of tweets 2022	Change YOY 2019-2020	Change YOY 2020-2022	Number of followers 2019	Number of followers 2020	Number of followers 2022	Change YOY 2019-2020	Change YOY 2020-2022
10	Koluszki	22	22	22	0%	0%	58	62	76	7%	23%
11	Konstantynów Łódzki		13	13		0%		17	48		182%
13	Kutno			878					896		
17	Łódź	4228	5331	8463	26%	59%	5945	8060	13400	36%	66%
25	Radomsko	2029	2029	0	0%	-100%	634	698		10%	-100%
33	Tomaszów Mazowiecki	137	142	143	4%	1%	170	220	291	29%	32%
36	Warta	1	1	1	0%	0%	1	1	2	0%	100%
40	Zduńska Wola	359	412	0	15%	-100%	136	161	196	18%	22%
Total (number of profiles)				6	7		7		17%		0%

Source: own research.

The Facebook profiles in place are up to date and the fan numbers suggest that an actively run fanpage mainly for office-resident communication has great potential. Each active Facebook profile has seen an increase in the number of followers during the periods analysed. In many cases, new posts are added daily or even several times a day. They usually relate to current events in the city and contain numerous photos or videos. The published posts take on a different character in the analysed period October 2019 - December 2022. 4 phases in communication can be distinguished. The first before the pandemic, the second at the time of its occurrence and the time of the so-called first lockdown in the period March-April 2020. The third after the loosening of restrictions - from May 2020, and the fourth from spring 2021. In the first distinguished stage, all published posts can be grouped according to the following categories (Woźniakowski, 2020):

- for residents (health/social welfare, temporary traffic obstructions, civic budget, event coverage, education) - most content published,
- leisure (cultural and sports events/activities, openings of new catering establishments, presentations of places, "behind the scenes" of municipal institutions, e.g. showing the work of the sewage treatment plant, competitions, memes),
- tourism (tourist attractions, history of places - photos and graphics comparing the historical and contemporary appearance of a place, festivals),
- investment/renovation/business (public and commercial, new jobs, fairs and conferences).

In the second stage, the posts published took on an official, formal character somewhat at odds with the idea of social media communication and only addressed epidemic issues such as:

- statistics - number of people infected/number of deaths following covid-19 infection by: total country/province/municipality,
- safety/prevention rules for the spread of the virus,
- information on restrictions imposed by central authorities.

In the third stage, some cities continued to publish mostly posts in a formal tone, referring to official government communications, as at the beginning of the pandemic. In contrast, the second group returned to the original form of communication using Facebook, thus generally following the accepted rules with regard to the form of communication (less formal, shortening the distance with the recipient), also adding posts related to the current epidemic situation. Only in the fourth phase from spring 2021 can the communication style be considered to have returned to the time before the pandemic. Although the communication of many local authorities has seen an emphasis on messages aimed at residents on broad health and health-promoting prevention.

With regard to the second service analysed - YouTube, the number of subscribers to each of the channels - profiles is significantly lower than on Facebook. However, in the case of this service, more important than the number of regular observers is the number of views of individual videos, which in many cases is tens or even hundreds of thousands. The number of channels on YouTube increased to 25 (against 19 in the previously analysed period).

However, it can be concluded that the increase in the number of channels has not been followed by an increase in the quality of the videos published. The biggest problem for self-governing channels on YouTube continues to be the randomness of the content they publish, their small number and the lack of new publications. There is also a lack of basic descriptions about a channel in the "information" tab, which could at least confirm that we are dealing with an official city channel.

A channel on YouTube is often treated as a kind of web TV (e.g. channels: Bełchatów TV, TV Ozorków) or a regional news service (e.g. Zgierz Space, Tydzień Reporterów TV Aleksandrów Łódzki). In some cases, the channel mainly reports on the deliberations of the city council or its subordinate committees (e.g. Zelów, Wieruszów, Stryków). Which, of course, is not a bad thing, but such content will not reach a wide audience. A better idea would be to create a playlist for such films, and another for other films published on the channel. Such an approach would allow a logical categorisation of individual films, as well as making it easier for interested users to find interesting content.

The third social network analysed - Instagram - has seen the largest increase in the number of profiles since 2020. There are currently 14 of them. On one profile - Złoczew - activity ceased in May 2019. In the case of the profiles of, among others, Wieluń and Wieruszów, new posts appear quite rarely (intervals of several weeks or even several months). Over the years analysed, the problem with Instagram is the provision of relevant content all the time. The main

characteristic of the service is visual content, mainly photos and short films, hence the publications should have a kind of artistic value, or at least the character of professional photo shoots. Consequently, the lack of a clearly defined purpose for having a profile on Instagram becomes apparent. There are often posts that duplicate content previously presented on Facebook. They are additionally accompanied by the same photos or graphics. In this case, it is difficult to engage the user, to persuade them to like the content on Instagram, when essentially identical content is provided regardless of the channel. Against this backdrop, the Łódź profile stands out, as it is the only one that is actively maintained, and the posts published (all bearing, among other things, the hashtag #kochamlodz) are in keeping with the nature of the service. The vast majority of posts refer to the presentation of various places in the city, often in an atypical manner, thus expressing the 'spirit' of the city in a rather symbolic way, which may encourage both residents and tourists to visit the presented places.

In the case of the last service analysed - Twitter, 7 of the identified city profiles are sporadically updated or have ceased any activity. The exceptions are the profiles of Kutno and Łódź. In the case of Kutno, tweets are added on average 2-3 per month (slightly too infrequent considering the nature of the service). On the provincial capital's profile, however, sometimes even a few tweets are added daily. They are mostly about current events in the city, although there are also some that encourage people to be more active (e.g. to search for more and more detailed news) on other services, mainly Facebook. As for the idea behind the posts, they are in keeping with the nature of the service, which is designed to publish short messages to refer the viewer to the full content published on other services and generate discussion.

Compared to the analogous analyses of the use of social networking sites by cities in the Łódzkie Voivodeship performed in 2019 and 2020, it should be noted that the errors that appeared in these communication channels have not been eliminated. The first shortcoming is the often erroneous positioning of social media plug-ins in the structure of the official website belonging to the city hall. They should be in a prominent position, preferably in the top bar of the page, or alternatively in the bottom menu or footer of the page. However, it still happens that they are in an inconspicuous place in the structure of the site, or the plug-ins for different profiles are in different places on the site, or they are not present at all despite the fact that a given profile exists, or they link to a non-existent service (e.g. a link to Google+ on Zgierz's website). In addition, clicking on a plug-in should open the profile on the social networking site in a new browser tab, rather than replacing the currently displayed content, which is not standard.

The second mistake is maintaining inactive profiles. Sometimes, despite the social networking plug-in being prominently placed on the page, out-of-date information or none at all is visible when redirected to the profile. If there is no new content, there is no justification for having a profile on a social networking site, it contradicts the basic idea of their functioning and may give the recipient the impression that nothing interesting worth showing is happening in the city.

Another problem is the lack of consistency in the message delivered through individual profiles on different social networks. Adopting a coherent communication strategy using profiles in individual services can produce a synergy effect, enable cross-activities, e.g. encouraging users of one service to follow an account in another service, because a competition for residents will be announced there, etc. Sometimes it can even give the impression that there is a lack of coherence in the communication strategy. Sometimes it can even feel as if random content is being published, as if the next post is forced. The inconsistency of the message is also related to. Profile pictures and background pictures posted on individual social media profiles. For ease of profile identification. It is a good idea to set up a single profile picture. For background photos, adapt to the specifics of the site. There are cases where profile pictures do not intuitively identify a city. E.g. Placing a view of the town hall building in the evening.

The last most common mistake (although the above certainly does not exhaust the topic) is to have too many profiles when there is no clear communication strategy using social media. In this case, one can stick to the principle that less is more. For example, on Opoczno's website there are six plugins for six different Facebook profiles of the town. The first one is "Opoczno the capital of oberek", the second one is related to the Ceramic Tile Festival, the others are "Eko Opoczno", "Sport and recreation", "Opoczno 2.0" and the last one - the municipality proper. It seems that it would be possible to make them one, especially as in the case of most profiles the publications are quite occasional.

4. Summary

On the basis of changes in interpersonal communication, communication between the authority and the resident (or other stakeholder, e.g. investor, tourist, etc.) is constantly evolving. Various types of innovations introduced in this area can temporarily improve the communication process or even revolutionise it (Wozniak, 2015). Image creation through social media has become an obligation for dynamically developing cities. Positioning the image of a modern and innovative city is not possible without conscious use of this communication channel. The image of cities in social media is created in many dimensions. It results not only from the development of the city (which builds identity) and the communication of information about it (which shapes image). Images of the city are also influenced by communication between representatives of local government units and interested audiences, which is directly related to the specifics of social networks. Social media have become a tool for the consistent strengthening of a city's brand and its popularity (Delińska, Kęprowska, 2018).

When summarising the ways in which cities of Łódź Province communicate on social media, it should be noted that despite more than two decades of their widespread use by people and numerous organisations, a significant proportion of cities' profiles are run as if their administrators were taking their first steps in the social media marketing environment. Against the backdrop of all the cities analysed, the regional capital certainly stands out, whose activities could be a benchmark for other cities. This is not about a disproportionately high promotional budget compared to other cities, as maintaining a profile on a social networking site can be a relatively low-cost communication tool. It is mainly a question of solving problems related to the division of responsibilities and competences of the relevant people in the office to coordinate social media activities, possibly employing a suitable external entity. In order for social media communication activities to be effective, you need to have a proper social media strategy for all channels. Without this, in many cases there will continue to be a sense of chaos and randomness in the content posted. In addition, local authorities that do not have any presence on the Internet (apart from a website, which is nowadays natural) must remember that "a city that is not on the Internet is treated as a technologically backward city" (Markowski, 2002, p. 132), and in such a city a significant part of the population may simply not want to live, study, etc., tourists to visit and potential investors to invest their capital.

Creating an image through social media has become an obligation for rapidly developing cities. Positioning the image of a modern and innovative city is not possible without conscious use of this communication channel. The image of cities in social media is created in many dimensions. It results not only from the development of the city (which builds identity) and the communication of information about it (which shapes image). Images of the city are also influenced by communication between representatives of local government units and interested audiences, which is directly related to the specifics of social networks. Social media have become a tool for the consistent strengthening of the city's brand and its popularity.

References

1. Brunk, K.H. (2010). Reputation building: beyond our control? Inferences in consumers' ethical perception formation. *Journal of Consumer Behaviour*, No. July-August, p. 278.
2. Brzustewicz, P. (2014). Marketing 3.0 – nowe podejście do tworzenia wartości. *Marketing i Rynek*, No. 2, pp. 2-8.
3. Castells, M. (1989). *The Informational City. Information Technology, Economic Restructuring, and the Urban-Regional Process*. Oxford, UK: Basil Blackwell; Cambridge, MA.

4. Delińska, L., Kępcowska, U. (2018). Kreowanie wizerunku polskich miast w mediach społecznościowych. *Zarządzanie i Finanse Journal of Management and Finance*, Vol. 16, No. 3/3, pp. 61-75.
5. Ergazakis, K., Metaxiotis, K., Psarras, J. (2004). Towards knowledge cities: Conceptual analysis and success stories. *Journal of Knowledge Management*, 8(5), pp. 5-15.
6. Florida, R.L. (2005). *Cities and the Creative Class*. New York, NY: Routledge.
7. Friedmann, J. (1995). Where we stand. A decade of world city research. In: P. Knox, P. Taylor (Eds.), *World Cities in a World-System* (pp. 21-47). Cambridge, UK: Cambridge University Press; New York, NY.
8. Hollands, R.G. (2008). Will the real smart city please stand up? *City*, 12(3), pp. 303-320.
9. Landry, C. (2000). *The Creative City: A Toolkit for Urban Innovators*. London, UK: Earthscan.
10. Łebkowski, M. (2009). *E-wizerunek. Internet jako narzędzie kreowania image'u w biznesie*. Gliwice: Helion.
11. Łopacińska, K. (2014). Social media w zintegrowanej komunikacji marketingowej. *Marketing i Rynek*, No. 12, pp. 2-6.
12. Mainka, A., Khveshchanka, S., Stock, W.G. (2011.06.30). *Dimensions of informational city research*. Digital Cities 7 – Real World Experiences. International Workshop at C&T 2011, Brisbane, Australia.
13. Podlaski, A. (2011). *Marketing społecznościowy. Tajniki skutecznej promocji w social media*. Gliwice: Helion.
14. Rak, A. (2011). Facebook, przyjaciel czy wróg przedsiębiorstwa. *Zeszyty Naukowe UE w Poznaniu*, No. 209, p. 99.
15. Rzepecki, J., Hankus-Matuszek, G. (2009). Wymagający użytkownik – bezcenny, *Marketing w praktyce*, No. 8, p. 36.
16. Sassen, S. (2001). *The Global City. New York, London, Tokyo*. Princeton, NJ: Princeton Univ. Press.
17. Shapiro, J.M. (2006). Smart cities. Quality of life, productivity, and the growth effects of human capital. *Review of Economics and Statistics*, 88(2), pp. 324-335.
18. Stock, W.G. (2011). Informational cities: Analysis and construction of cities in the knowledge society. *Journal of the American Society for Information Science and Technology*, 62(5), pp. 963-986.
19. Taylor, P.J. (2004). *World City Network. A Global Urban Analysis*. London: Routledge.
20. Woźniakowski, M. (2015). Media społecznościowe w komunikacji samorządów terytorialnych. Przykład regionu świętokrzyskiego. *Studia i Materiały "Miscellanea Oeconomicae"*, nr 4/I, pp. 291-303.
21. Woźniakowski, M. (2020). Social media used by local governments of the Lodz Voivodeship. *Zeszyty Naukowe. Organizacja i Zarządzanie*, no. 146. Politechnika Śląska, pp. 533-542.

22. Woźniakowski, M. (2021). Social media in the communication between the cities of the Łódź voivodeship and stakeholders during the covid-19 pandemic. *Zeszyty Naukowe. Organizacja i Zarządzanie, no. 152*. Politechnika Śląska, pp. 233-244.
23. Yigitcanlar, T., Han, H.J. (2010). Urban telecommunications network. Technology convergence and urban infrastructure. In: T. Yigitcanlar (Ed.), *Sustainable Urban and Regional Infrastructure Development. Technologies, Applications and Management, Information Science Reference* (pp. 77-90). Hershey, PA.
24. Żak, K. (2015). Media społecznościowe jako narzędzie budowania relacji przedsiębiorstwa z klientem. *Zeszyty Naukowe Uniwersytetu Szczecińskiego, No. 117*, p. 310.

THE CONCEPT OF A DECENTRALIZED AUTONOMOUS ORGANIZATION AS AN INNOVATIVE ORGANIZATIONAL STRUCTURE

Mateusz ZACZYK

Silesian University of Technology, Faculty of Organization and Management; mateusz.zaczyk@polsl.pl,
ORCID: 0000-0002-3206-4784

Purpose: The aim of this article is to present the concept of Decentralized Autonomous Organizations in the context of the evolution of organizational structures. The article presents the current state of knowledge about DAOs, taking into account the principles of their functioning and the current state of development. The roles of individual actors involved in the DAO were also discussed and typical features of the DAO organization were indicated.

Design/methodology/approach: The main method used in this article is a literature review supplemented with an analysis of online industry sources and reports of consulting companies. The analysis included a review of the characteristics of the DAO organization against the background of traditional structures and the ways of functioning of the DAO.

Findings: The article describes the characteristics of organizations managed with smart contracts created thanks to the use of blockchain technology. The stages of the formation of DAOs and the main principles of their functioning based on the possession of digital tokens of a given organization, as well as the right to participate in voting on decisions made in the DAO, were indicated. The basic advantages and risks associated with the functioning of DAOs were also indicated.

Originality/value: The originality of this article lies in the confrontation of the theory and practice of DAOs with traditional, hierarchical organizations with specific features. The current literature in the field of DAOs is not very extensive, especially in relation to the issue of organizational structures, as demonstrated in the Materials and Methods section of this article.

Keywords: decentralized autonomous organization, organizational structure, blockchain technology, smart contracts.

Category of the paper: literature review.

1. Introduction

Among the many problems of the modern world, issues such as the war in Ukraine or the development of the economy in the post-pandemic world and in an environment full of high inflation are currently mentioned. An increasingly important issue is also the issue of coping with the global energy and food crisis, as well as the increasingly frequent problems of the labor market. Nevertheless, among the key challenges of the modern world, there are those related to the so-called "metaworld". The latter of the above-mentioned problems is related to the evolution of the Internet, perceived as a necessity to create a "new version of the Internet".

Among the companies with the largest market capitalization around the world, technological companies based on the use of the Internet, such as Apple, Microsoft, Alphabet (Google) and Amazon, are in the lead, as shown in Figure 1.






Rank	Name	Market Cap	Price
1	 Apple AAPL	\$2.141 T	\$135.21
2	 Saudi Aramco 2222.SR	\$1.892 T	\$8.60
3	 Microsoft MSFT	\$1.757 T	\$235.81
4	 Alphabet (Google) GOOG	\$1.183 T	\$91.78
5	 Amazon AMZN	\$973.85 B	\$95.46

Figure 1. Market capitalization of largest world companies.

Source: <https://companiesmarketcap.com/>, 19.01.2023.

The fact that the Internet is used as the main channel for servicing the Internet flow by the world's top companies suggests the need to consider the evolution of the Internet itself. Over the years, three stages of its development can be observed:

- Web 1.0 - refers to the first generation of the World Wide Web that emerged in the 1990s. It was primarily a static, read-only network, where users were able to get access to information but could not interact with it. Web pages were simple and mostly text-based, and the main way of interacting with them was through hyperlinks (Getting, 2007).

- Web 2.0 - emerged in the early 2000s and brought a more interactive and dynamic experience to the web. It introduced the concept of user-generated content and social media, allowing users to actively participate and collaborate on the web. Popular examples of Web 2.0 platforms include social networking sites like Facebook and Twitter, as well as blogs and video sharing sites like YouTube (O'Reilly, 2005).
- Web 3.0 - also known as the "Semantic Web" is the next evolution of the web (Berners-Lee, 2001). It aims to create a more intelligent and interconnected web that can understand and interpret the meaning of the content it contains, rather than just the surface-level information. This is achieved by adding a layer of metadata to web pages, which allows machines to understand the context of the data (Harris, 2009). Web 3.0 technologies like the blockchain, artificial intelligence, and the Internet of Things (IoT) are expected to play a major role in this evolution. It also allows for the creation of decentralized applications and smart contracts, which can provide a new way of organizing online activities and transactions.

The previously mentioned companies with the world's largest market capitalization undoubtedly operate in a digital environment. However, they use traditional methods of management and organizational structures, which may raise the need for evolution of the current perception of organizational structures of enterprises.

2. Materials and methods

A literature review - in particular bibliometrics - was carried out for research without the publishing time limitation on the topic of Decentralized Autonomous Organization. The first step was to analyse publications included in the Scopus database. However, for a comprehensive study, the analysis was deepened to include the Web of Science database.

The following queries were run on January 10th 2023:

- Scopus: TITLE-ABS-KEY ("decentralized AND autonomous AND organization"),
- WoS: TOPIC: ("decentralized autonomous organization"); Indexes: SCIEXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCREXPANDED, IC.

The search results showed a relatively small number of publications (WoS - 478, Scopus - 711) in the subject area. Figure 2 shows the number of publications on DAO over the last 10 years in both analyzed databases.

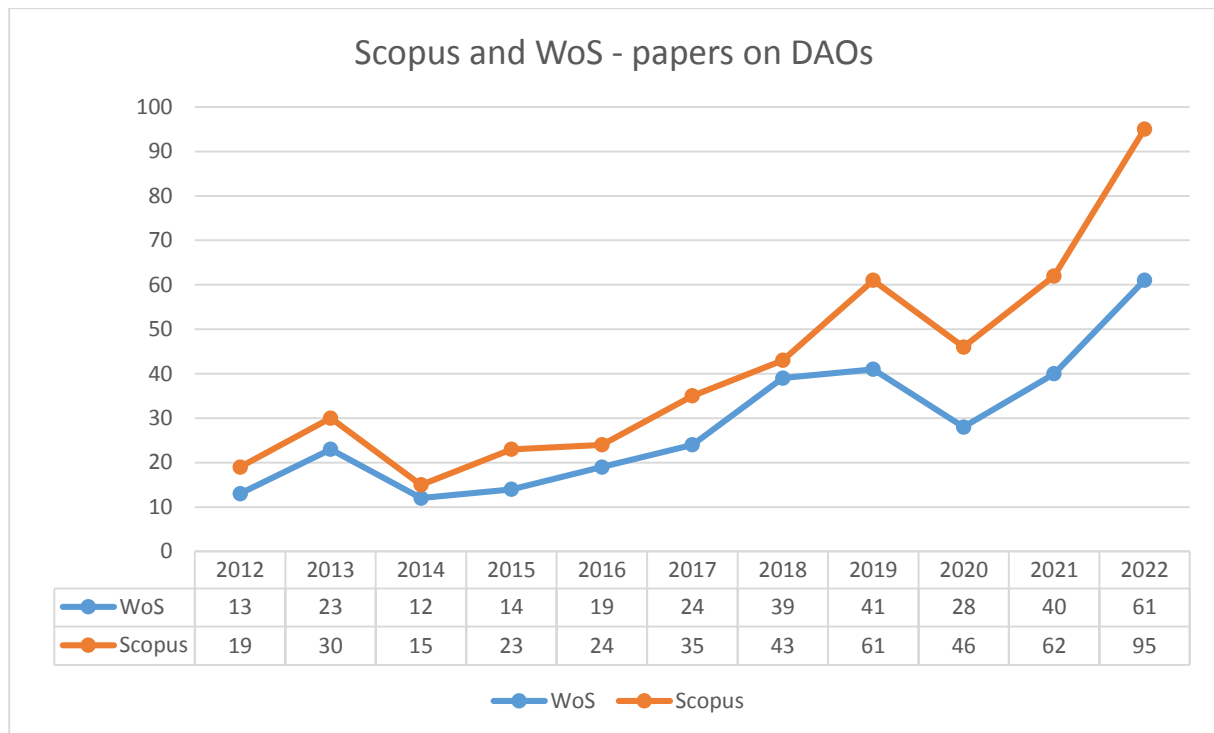


Figure 2. Publication of articles in each year for Scopus and WoS databases.

Source: own study.

In the next step, to examine the state of research on decentralized autonomous organization in the context of organizational structures, the following queries were run on January 10th 2023:

- Scopus: (TITLE-ABS-KEY (decentralized AND autonomous AND organization) AND TITLE-ABS-KEY (organizational AND structure)),
- WoS: TOPIC: ("decentralized autonomous organization" AND "organizational structure"); Indexes: SCIEXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCREXPANDED, IC.

The search results indicate a small number of publications (Scopus - 26, WoS - 20) embedding the topic of DAO in the context of organizational structures, which confirms the author's assumptions about the legitimacy of in-depth analyzes in this area. During the preparation of this article, the literature review resulting from the above bibliometric analyzes was supplemented with a review of industry reports and reports of analytical and consulting companies.

3. The potential for changes in the perception of organizational structures

The concept of contemporary organizational structures evolution outlined in the introduction requires defining the current state of their basic features. Among the features of traditional organizational structures, mostly vertical ones, the following can be noted:

- a hierarchical structure - there is a clear chain of command and levels of authority. This means that decisions are made by those at the top of the hierarchy and are then passed down through the organization (Crumpton, 2013),
- centralization - the power and decision-making authority is concentrated in a small group of people at the top of the hierarchy, while the rest of the organization is dependent on these decisions (Mintzberg, 1979; Fredrickson, 1986),
- a lack of transparency - information and decision-making processes are not shared with all members of the organization. This can make it difficult for employees to understand the reasoning behind decisions and to hold leadership accountable (Albu, 2014; Ashana, 2013),
- the dependence on the unit and its internal resources - low ability to adapt to changes in the environment and to take advantage of external opportunities,
- the need for trust in decision-makers, as they are not transparent, which can lead to a lack of trust from the employees and from the public. This can make it difficult to build relationships and partnerships,
- the arbitrariness of decision-making - decisions are often made based on personal opinions and biases rather than on data and evidence. This can lead to poor decisions and a lack of accountability.

Noting the above-mentioned features, it seems reasonable to ask if it is worthy to decentralize management structures. Table 1 shows the potential direction of change in traditional organizational structures.

Table 1.

The direction of changes in the characteristics of organizational structures - a proposal

Features of traditional structures	The direction of changes
Hierarchy	Democracy
Centralization of management	Decentralization
Unit dependency	Community dependency
Limited transparency	Full transparency
The need for trust	Trust with software

Source: own study.

The directions of changes in the characteristics of traditional organizational structures mentioned above can be achieved by undertaking a series of activities that can be arranged in the following sequence:

- 1) Decentralize decision-making process: Instead of having all decisions made by a small group of people at the top of the hierarchy, decision-making process can be distributed throughout the organization. This can be achieved by giving employees more autonomy and allowing them to make decisions that affect their work.

- 2) Increase transparency: Organizations can increase transparency by sharing information and decision-making processes with all members of the organization. This can be achieved by implementing communication channels such as open-door policies and employee surveys.
- 3) Implement democratic processes: Organizations can implement democratic processes such as voting and consensus-building to make decisions. This allows for multiple perspectives to be considered and for decisions to be made based on the majority opinion.
- 4) Use blockchain technology: Organizations can use blockchain technology to increase trust and transparency. Blockchain allows for transparent and tamper-proof record keeping, which can provide a way to track decisions.
- 5) Use data-driven decision-making: Organizations can use data-driven decision-making to ensure that decisions are based on evidence and not on personal opinions or biases. This can be done by collecting and analyzing data and using it to inform decision-making processes.
- 6) Use data-driven decision-making: Organizations can use data-driven decision-making to ensure that decisions are based on evidence and not on personal opinions or biases. This can be done by collecting and analyzing data and using it to inform decision-making processes.
- 7) Encourage employee participation and empowerment: Organizations can encourage employee participation and empowerment by creating an environment where employees feel valued and invested in the organization's success. This can be done by providing opportunities for professional development, recognition, and rewards for achieving goals.
- 8) Foster a culture of trust: Organizations can foster a culture of trust by being open, honest and transparent in their communication and by being responsive to the concerns of employees and other stakeholders.

By following those steps, organizations can create management structures that are more democratized, decentralized, transparent, and trustworthy as suggested in Table 1. This can lead to more efficient and effective decision-making, increased employee engagement, and improved organizational performance. The concept which can be appropriate to achieve all the features mentioned above is the concept of Decentralized Autonomous Organization.

4. The concept of Decentralized Autonomous Organization

In the opinion of the author of this article, the concept that fits into the process of transformation of management structures outlined above is the concept of Decentralized Autonomous Organizations (DAOs) based on the use of blockchain technology for the purpose of creating organizations managed with the use of smart contracts (Hassan, DeFilipi, 2021).

DAOs are also defined as a new form of organization that operate on a blockchain network and are governed by a set of rules encoded in smart contracts (Buterin, 2014). These smart contracts automatically execute and enforce the rules and procedures of the organization, enabling decentralized decision-making and removing the need for intermediaries (Pereira et al., 2019). DAOs use blockchain technology to provide a decentralized and transparent way of managing an organization (Wang et al., 2019). The transparency of the blockchain allows for greater trust among members of the organization (Singh, Kim, 2019; DuPont, 2017). Smart contracts, which are self-executing contracts with the terms of the agreement between buyer and seller being directly written into lines of code, are used to encode the rules and procedures of the organization into the blockchain. What's more, DAOs can enable more efficient and transparent management by allowing for the creation of autonomous and decentralized organizations that can adapt to changes in the environment and take advantage of external opportunities (Panetta, 2019). Additionally, it can be said that DAOs can provide a new way of organizing online activities and transactions, by enabling the creation of decentralized applications and smart contracts, which can provide a more efficient and transparent way of governance (Morkunas et al., 2019). In the opinion of the author of this article, DAOs have the potential to revolutionize the way organizations are run and adapt to the changing environment.

Over the years, the DAO concept has taken various forms, which allows us to indicate three stages of its development (Cointelegraph, 2022):

- DAO 1.0 – a concept for a smart home. It was an early example of a DAO that used smart contracts to automate and manage the functions of a home (Dilger, 1997). The concept proposed that a smart home could be run by a set of rules encoded in smart contracts, which would automatically execute and enforce the rules for the home's operation. The smart contracts would manage various functions of the home, such as heating, lighting, security, and energy management. For example, the smart contract could automatically adjust the thermostat based on the outside temperature, or automatically turn off lights when no one is in the room. The smart home would also be connected to the internet, allowing for remote monitoring and control. Users would be able to access the smart home's functions through a web interface, and make changes to the rules and settings encoded in the smart contracts. The main goal of DAO 1.0 was to provide a more efficient and automated way to manage the functions of a home.

By using smart contracts, the smart home would be able to operate autonomously and make decisions based on predefined rules, without the need for human intervention. This concept was a precursor for the current trend of smart homes and Internet of Things (IoT) devices, and also an early example of how blockchain technology and smart contracts can be used to create DAOs (Cointelegraph, 2022).

- DAO 2.0 - the second stage of the evolution of DAOs, which builds upon the concept of DAO 1.0 and introduces new features and capabilities. One of the most notable examples of DAO 2.0 is Ethereum, which is a decentralized platform that allows for the creation of smart contracts and decentralized applications (Buterin, 2014). Ethereum's smart contract platform allows for the creation of more advanced and sophisticated DAOs. It provides a more flexible and powerful programming environment for creating smart contracts, which can be used to implement complex decision-making logic, decentralized governance, and other advanced features. One of the key features of DAO 2.0 is the ability to create decentralized autonomous organizations that can operate autonomously and make decisions based on predefined rules encoded in smart contracts.
- DAO 3.0 - a potential direction of the DAO revolution that aims to take the concept of decentralized autonomous organizations to the next level. It is not a well-established term and there is not a clear consensus on what exactly it would entail, but it is generally believed to be the next step in the evolution of DAOs that builds on the advancements of DAO 2.0. One potential feature of DAO 3.0 is the integration of Artificial Intelligence and Machine Learning capabilities to the smart contracts and decision-making process. This would allow for the creation of DAOs that are able to learn from past experience and make decisions based on data and patterns, rather than predefined rules. Additionally, DAO 3.0 could also include the integration of new technologies such as the Internet of Things (IoT), 5G networks, and edge computing. These technologies could provide DAOs with more capabilities to interact with the physical world, and also enhance their scalability and performance (Cointelegraph, 2022).

The principle of operation of the DAO

DAO, as a modern structure of the organization's operation, assumes new rules of its functioning from the very moment of its establishment. In a few steps, it can be presented how the DAO works:

- 1) The founders (The Team) of a DAO create the concept and the Whitepaper (White Book - a set of rules; Constitution) is being prepared as a main document describing the rules of a given DAO. A DAO typically has a team of developers and other stakeholders who are responsible for creating and managing the organization. The team is responsible for creating the smart contracts that will govern the organization, as well as for building the user interface and other tools that will be used to interact with the DAO. A whitepaper is a document that describes the goals and objectives of the DAO, as well as the technical

details of how it will work. The whitepaper typically includes information about the team, the technology that will be used, and the token economics of the DAO.

- 2) A distribution of tokens – this is the way of creating communities and raising funds for the development of a given DAO concept. DAOs are typically financed by issuing digital tokens. These tokens can be bought and sold on cryptocurrency exchanges, and they give holders a stake in the organization. The tokens are distributed to stakeholders in an initial coin offering (ICO) or other fundraising events, and they give holders the right to participate in the governance of the organization.
- 3) Possession of tokens - which is giving the right to make decisions by attending voting and benefit from the development for every DAO member. The right to make decisions in a DAO is typically determined by the number of tokens that a holder has. The more tokens someone has, the more voting power they have in the organization. The holders of tokens can vote on proposals and make decisions collectively, without the need for a central authority.
- 4) Current operation of the organization based on smart contracts and democratic decision-making by token holders.

In general, DAOs work by using blockchain technology and smart contracts to manage the organization. They are governed by a team of developers and other stakeholders, and are financed by issuing digital tokens which give holders a stake in the organization. The holders of tokens have the right to make decisions in a DAO, and the decision-making process is based on voting power determined by the number of tokens held.

Roles in DAOs

In a DAO there are several key roles that are typically defined (World Economic Forum, 2023):

- Founders - the individuals or group of individuals who initiate the creation of the DAO. They are responsible for developing the idea, creating the whitepaper, and assembling the initial team of developers and stakeholders. They also set the initial rules and governance structure for the DAO.
- Stakeholders - individuals or entities that hold tokens in the DAO. They are the owners of the organization and have the right to participate in the governance of the organization by casting votes on proposals and making decisions collectively. Stakeholders are also impacted by the decisions made in the DAO and may have financial incentives to participate in the governance.

- Validators - they play an important role in maintaining the integrity of the network and ensuring the proper functioning of the organization. Validators are nodes on the network that are responsible for validating transactions and maintaining the state of the smart contract. They do this by validating the transactions that are broadcasted to the network and by maintaining the state of the smart contract, which includes the balance of tokens, the voting rights of the stakeholders, and any other data that is stored on the smart contract.
- Developers - individuals or entities responsible for creating and maintaining the smart contracts that govern the DAO. They are responsible for developing and deploying the smart contracts, as well as maintaining and upgrading the codebase. They also ensure that the smart contracts function as intended and that they are secure.

The basic principles of DAO functioning and the roles assigned to their participants are reflected in the structure of this type of organization, which takes a different form in relation to organizations with a traditional structure. This is schematically depicted in Figure 3.

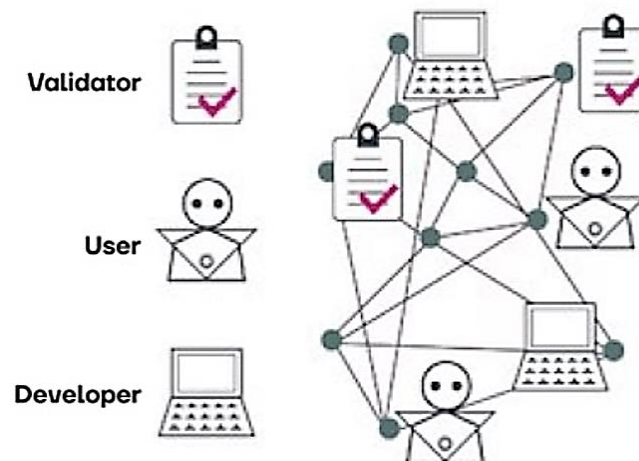


Figure 3. The structure of DAO.

Source: <https://blocksize-capital.com/from-defi-to-dao/>, 19.01.2023.

All decisions made in the organization require consensus among its participants, and are implemented as a result of the implementation of smart contracts launched as a result of community votes. In the further part of the article, a number of currently existing DAOs are indicated and the current state of development of DAO initiatives is discussed.

5. The current state of DAOs development

Currently, there are many organizations based on the DAO model. In May 2021, approximately 700 active DAOs were registered, and this number increased to approximately 4,000 in mid-2022. Figure 4 illustrates the quantitative structure of DAOs broken down into

categories according to data from August 2022 (Cointelegraph, 2022), while Figure 5 shows the market capitalization of DAOs over the years (7-day moving average) and the market capitalization of the two largest cryptocurrencies (Bitcoin and Ethereum). In Figure 5, you can easily see a strong positive correlation between these capitalizations, as the value of the cryptocurrency market is a key driver of the adoption of solutions based on blockchain technology, such as DAO. Table 2, on the other hand, shows several examples of existing DAOs broken down by application categories, such as: Investment DAO, Grants DAO, Social DAO, DeFi DAO, Media DAO. Specific applications of the DAO model are indicated for illustrative purposes and are not a key aspect discussed in this article, however, they constitute a field for further research focused on the functioning of specific organizations.

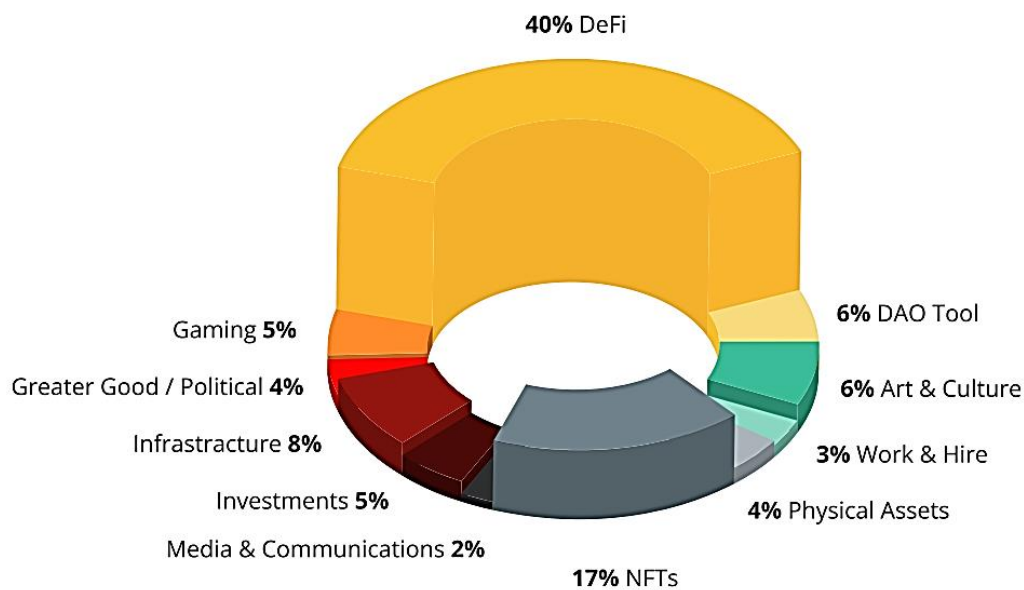


Figure 4. The categories of DAO.

Source:<https://research-backend.cointelegraph.com/uploads/attachments/c19ctvb5i07wzr4qnhgz2eu7v-cointelegraph-research-dao-report-october.pdf>, 19.01.2023.

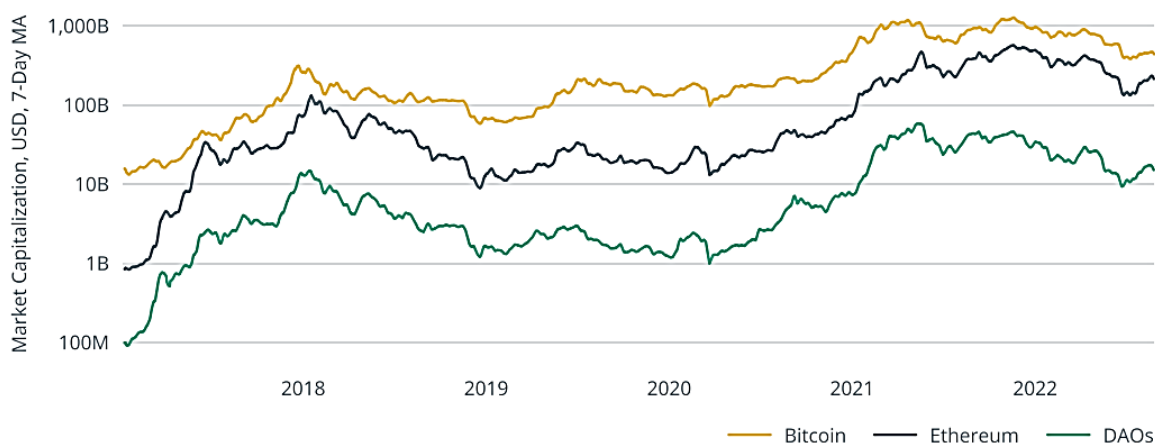


Figure 5. Market capitalization of DAO.

Source:<https://research-backend.cointelegraph.com/uploads/attachments/c19ctvb5i07wzr4qnhgz2eu7v-cointelegraph-research-dao-report-october.pdf>, 19.01.2023.

As to be observed in Figure 5, the market capitalization of DAOs has been strongly correlated with the prices of Bitcoin and Ethereum for several years. Periods of price increase (and market capitalization) of the leading cryptocurrencies translate into increased interest in blockchain technology by managers of modern organizations. In these periods, there is also a noticeable increase in the labor supply of smart contract developers, which may affect the development trends in the field of DAOs.

Table 2.

Examples of currently operating DAOs

DAO category	Practical example
Investment DAO	Contitution DAO
Grants DAO	MetaCartel, Ukraine DAO
Social DAO	BoredApe YachtClub
DeFi DAO	Uniswap, MakerDAO
Media DAO	Bankless DAO

Source: own study.

Among the examples of currently existing DAOs, several categories can be observed. Most often, contemporary DAOs are involved in collecting funds to support various types of initiatives (investment DAOs), providing grant support (grants DAOs), gathering communities around a jointly defined financial goal (social DAOs), or offering modern, decentralized financial services (DeFi DAOs), as well as the promotion of solutions based on blockchain technology.

6. Summary

To summarize, DAOs offer several benefits over traditional centralized organizations. A few key the benefits of DAOs could be listed as below:

- Financial gains - holders of tokens in a DAO have the potential to earn a financial gain through the appreciation of their tokens. However, the value of tokens is subject to market conditions and can fluctuate, so there is also a risk involved.
- Real impact on the fate of the project - the holders of tokens in a DAO have a real impact on the fate of the project by having the ability to vote on proposals and make decisions collectively. This gives them a sense of ownership and responsibility for the success of the project.
- A sense of belonging to a community - being a part of a DAO gives holders a sense of belonging to a community of like-minded individuals who are working towards a common goal.

- A sense of satisfaction: Being able to participate in the governance of an organization and make decisions that have a real impact can give holders a sense of satisfaction and fulfillment.
- Sharing success: The holders of tokens in a DAO share in the success of the organization, as the value of their tokens is tied to the success of the project.
- No intermediaries - DAOs operate on a decentralized network and are governed by a set of rules encoded in smart contracts. This eliminates the need for intermediaries such as banks, legal entities and other third parties, which can provide a more efficient and cost-effective way of managing an organization.
- Flow transparency (by the use of blockchain technology) - the transparency of the blockchain also allows for greater trust among members of the organization.

On the other hand, there are also some drawbacks connected with the usage of DAOs. A few risks associated with the development of DAOs are listed below:

- Regulatory uncertainty - DAOs operate on a decentralized network and are not subject to traditional regulatory frameworks. This can create uncertainty for stakeholders and developers, as it is unclear how regulatory authorities will treat DAOs in the future. This uncertainty can make it difficult to predict the long-term viability of a DAO.
- Low speed of decision making process - decentralized decision making in a DAO can be a slow process because of the need for consensus among stakeholders. This can make it difficult to make quick decisions and respond to changes in the environment.
- Security doubts - smart contracts and blockchain technology are still relatively new, and there are security risks associated with them. These risks can include hacking, bugs in the code, or human error. As a result, there is a risk that a DAO may be compromised, which could result in the loss of funds or other assets.

DAOs are a modern organizational structure that uses blockchain technology and smart contracts to manage an organization. They provide a decentralized and transparent way of decision-making, removing intermediaries, and enabling more efficient and transparent management. DAOs have the potential to revolutionize the way organizations are run and adapt to the changing environment. However, despite the potential benefits of DAOs, the majority of projects in this area have failed. This is not uncommon for innovative solutions, as the majority of new projects fail due to various reasons such as lack of funding, lack of interest from users, or technical difficulties. Nonetheless, a few successful projects have emerged, such as the DAO, Ethereum, and MakerDAO, which have shown that DAOs have the potential to change the way organizations are managed and to create new opportunities in various fields.

In the opinion of the author of this publication, the topic worth taking up is the application of the DAO concept in the context of the development of initiatives in the field of public management, crowdfunding and supply chain management. This article was intended to present the concept of DAO in the context of changes in the traditional perception of the organization,

especially in the face of the increasing role of the use of the Internet and modern technologies such as blockchain and smart contracts. The author's opinion on decentralizing the management of modern enterprises and social structures is clearly positive. Although there are numerous risks associated with the development of innovative solutions, such as incorrectly created smart contracts due to the early stage of technology development, or the existence of solutions that lead to the loss of funds by investors (abuse, scams), this is a situation typical of solutions at a very early stage stage of the life cycle. The regulations of supervisory institutions, which are appearing to an ever greater extent, should contribute to reducing the risks and increasing the adoption of the solutions described in this article.

References

1. Albu, O.B. (2014). *Transparency in organizing: A performative approach*. Frederiksberg: Copenhagen Business School (CBS).
2. Ashana, G.T. (2013). *Lack of Transparency: The Darkness That Leads to Failure*.
3. Berners-Lee, T., Hendler, J., Lassila, O. (2001). The Semantic Web. *Scientific American*, No. 284(5), pp. 28-37.
4. Buterin, V. (2014). A next-generation smart contract and decentralized application platform. *White Paper, Vol. 3, No. 37*, pp. 1-36.
5. Cointelegraph (2022). *DAO: The Evolution of Organization*. Retrieved from: <https://research.cointelegraph.com/reports/detail/dao-the-evolution-of-organization> 19.01.2022.
6. Crumpton, M. (2013). Is the chain of command working for you? *The Bottom Line: Managing Library Finances*, 26(3), pp. 88-91.
7. Dilger, W. (1997). Decentralized autonomous organization of the intelligent home according to the principle of the immune system. *IEEE International Conference on Systems, Man, and Cybernetics. Computational Cybernetics and Simulation*, 1, pp. 351-356.
8. DuPont, Q. (2017). Experiments in algorithmic governance: a history and ethnography of 'The DAO,' a failed decentralized autonomous organization. *Bitcoin and beyond*, Routledge, pp. 157-177.
9. Fredrickson, J.W. (1986). The strategic decision process and organizational structure. *Acad. Manag. Rev.*, 11(2), pp. 280-97.
10. Getting, B. (2007). *Basic Definitions: Web 1.0, Web. 2.0, Web 3.0*. Retrieved from: <http://www.practicalecommerce.com/articles/464/Basic-Definitions-Web-10-Web-20-Web-30/>, 19.01.2023.

11. Harris, D. (2009). *Web 2.0 Evolution into The Intelligent Web 3.0, 100 Most Asked Questions on Transformation, Ubiquitous Connectivity, Network Computing, Open Technologies, Open Identity, Distributed Databases and Intelligent Applications*. Asple: Emereo Publishing.
12. Hassan, S., De Filippi, P. (2021). Decentralized autonomous organization. *Internet Policy Review*, 10(2), 1-10.
13. Mintzberg, H. (1979). *The structuring of organizations: a synthesis of the research*. New Jersey: Prentice-Hall.
14. Morkunas, V.J., Paschen, J., Boon, E. (2019). How blockchain technologies impact your business model. *Business Horizons*, Vol. 62, No. 3, pp. 295-306.
15. O'Reilly, T. (2005). *What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*. Retrieved from: <http://www.oreilynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>, 19.01.2023.
16. Panetta, K. (2019), Understand the 4 phases of blockchain evolution and explore potential business opportunities. *Gartner*, Retrieved from: <https://www.gartner.com/smarterwithgartner/the-4-phases-of-the-gartner-blockchain-spectrum>, 19.01.2023.
17. Pereira, J., Tavalaei, M.M., Ozalp, H. (2019). Blockchain-based platforms: decentralized infrastructures and its boundary conditions. *Technological Forecasting and Social Change*, Vol. 146, pp. 94-102.
18. Singh, M., Kim, S. (2019). Blockchain technology for decentralized autonomous organizations. *Advances in Computers, Elsevier*, Vol. 115, pp. 115-140.
19. Wang, S., Ding, W., Li, J., Yuan, Y., Ouyang, L., Wang, F.Y. (2019). Decentralized autonomous organizations: Concept, model, and applications. *IEEE Transactions on Computational Social Systems*, 6(5), pp. 870-878.
20. World Economic Forum, Decentralized Autonomous Organization Toolkit. Retrieved from: https://www3.weforum.org/docs/WEF_Decentralized_Autonomous_Organization_Toolkit_2023.pdf, 19.01.2023.

ANALYSIS OF QUALIFICATIONS IN VOCATIONAL SECONDARY SCHOOLS IN THE ASPECTS OF INDUSTRY 4.0 DEVELOPMENT

Michał ZASADZIEN

Silesian University of Technology, Faculty of Organization and Management, Department of Economics and Informatics; michal.zasadzien@polsl.pl, ORCID: 0000-0002-3181-9815

Purpose: The paper presented here was intended to describe the extent to which secondary technical education in Poland is oriented towards the acquisition of qualifications needed in modern factories in line with the Industry 4.0 concept.

Design/methodology/approach: The study was conducted by analysing information contained in the Ministry of Education and Science's classification of vocational education professions and in the core curriculum for vocational education professions. The professions analysed were those which, according to literature research, are the most desirable in an industry based on the concept of Industry 4.0. Information contained on the websites of selected schools was also analysed.

Findings: As a result of the analysis carried out, it was found that the knowledge describing the qualifications of future technical staff in terms of Industry 4.0 is insufficient or even negligible. The core curricula do not require teachers in technical schools to address issues related to the concept of Industry 4.0. A lack of concepts related to Industry 4.0 in both the learning objectives and outcomes and professional qualifications was identified.

Research limitations/implications: The research concerned only the professions taught in Poland in 5-year technical schools on the base of the primary school. Comparison of the studied aspects in other countries, e.g. the European Union, is difficult and requires more in-depth research. This is due to the diversity of systems of secondary technical education in individual countries and the non-uniform form of curricula.

Practical implications: Several important conclusions emerge from the study. First and foremost, it should be emphasised that Polish schools do not prepare students studying in them for the phenomenon of dynamic development of manufacturing techniques represented by the idea of Industry 4.0. Graduates are not familiar with the assumptions, opportunities and threats related to it. Even if the substantive preparation of school graduates meets the requirements and expectations of Industry 4.0, schools do not promote this fact among potential candidates.

Originality/value: The paper presents the state of qualification requirements in Polish secondary technical schools in the context of the development of manufacturing techniques associated with the concept of Industry 4.0. It answers the question of whether and to what extent curricula and professional qualifications contain requirements concerning knowledge of Industry 4.0? The results of the study may be an element in the discussion on the condition of Polish vocational education in the context of requirements for employees in modern factories.

Keywords: industry 4.0, smart factory, education, technical school, qualification.

Category of the paper: research paper.

1. Introduction

One of the most important characteristics of modern companies is innovation. Nowadays, in order to succeed in the market, a company must be able to respond quickly to the changing needs of customers and the dynamic market. Innovation is a key element that allows companies to continuously improve their products and services, as well as to introduce new technological solutions and working methods.

Business innovation is the ability to introduce new solutions and ideas to improve business processes, improve the quality of products or services, increase efficiency and competitiveness in the market. The introduction of innovative ideas and projects can concern many areas of the enterprise, such as technology, marketing, work organisation, production or services.

Innovative companies also strive to continuously improve their products and services in order to meet the changing needs of customers and to adapt to and even dictate changing market trends. By doing so, they are able to increase their profits, gain new customers and build and maintain their position in the market.

In modern, innovative factories, the role of the worker is changing and their tasks are becoming more complex and demanding. Operators often operate sophisticated machinery and equipment, and their work involves monitoring production processes and controlling product quality. This requires them to have high technical qualifications and the ability to operate modern IT systems. At the same time, employees must be flexible and ready to adapt quickly to changing production conditions. The ability to work as part of a team and the readiness to continuously improve their qualifications are also important.

The literature on the subject comprehensively describes the assumptions of Industry 4.0. The changes in the organisation of work, the value chain and the technologies used in modern factories and the associated requirements for future employees are well known. Both engineers, managers and technicians. However, it was found that there is a lack of research answering the question to what extent modern technical education has responded to the challenges posed by the fourth industrial revolution. This analysis, as well as the author's previous study (Zasadin, 2022), seeks to fill this research gap.

The main objective of the analysis is to answer the question to what extent the assumptions of the concept of Industry 4.0 as an intelligent factory of the future are present in Polish secondary technical education? In order to achieve the main objective, two intermediate objectives were defined:

- to identify and characterise the information on Industry 4.0 found in the core curriculum for secondary schools published by the Ministries of Education and Science, and
- to identify and characterise information on Industry 4.0 found on the websites of selected secondary technical schools.

The objectives of the study will be realised through a critical analysis of the information contained in the analysed sources.

2. Literature review

With the rapid development of technology, innovation is a key element for businesses. Companies that are able to innovate are more competitive and more likely to succeed in the market. Investment in research and development, recruitment of highly competent employees and openness to new ideas and approaches to business are important elements that enable companies to achieve innovation (Schwab, 2016).

Companies that combine innovation with the concept of Industry 4.0 are able to achieve much greater benefits than those that operate traditionally (Liao et al., 2017; Zezulka et al., 2016). The main benefits from implementing the Industry 4.0 concept are cited as:

1. Increased production efficiency, optimisation and quality - thanks to the use of automation, robotics, artificial intelligence and the Internet of Things, it is possible to detect and eliminate production errors in real time, as well as to increase production speed and precision. Continuous monitoring of production processes and data analysis to identify and eliminate the causes of failures, reduce machine downtime, make better use of raw materials and energy, and optimise logistics processes (Broy, 2010; Holub, Hammer, 2017).
2. Reduced time to react to market changes and increased production flexibility - thanks to the ability to analyse and interpret data, Industry 4.0 enables a rapid response to changing market needs and also allows innovations to be brought to market more quickly. Thanks to intelligent production systems, Industry 4.0 enables on-demand production with minimal delays and changes in production processes (Kamiński, 2018; Wang et al., 2017).
3. Increase worker safety - the use of robotisation and automation of production processes reduces the risk of occupational accidents and allows robots to perform dangerous and harmful tasks (Forcina, Falcone, 2021).
4. Optimisation of production costs - Industry 4.0 allows a better use of resources, a reduction in waste and wastage of raw materials, as well as an increase in production efficiency, which translates directly into a reduction in manufacturing costs (Rosin et al., 2020).

Innovation and Industry 4.0 are closely linked through, among other things, the use of modern technologies (Alcácer, Cruz-Machado, 2019; Gajek et al., 2022; Pereira, Romero, 2017; Wortmann, Flüchter, 2015). Among the most important revolutionary technological changes, the authors mainly mention:

- the digital integration of production systems with IT systems, which enables better control over the entire production process,
- automation of production processes, which speeds up production and reduces the risk of errors,

- personalisation of products according to individual customer needs through, for example, the use of 3D printing or digitisation of design and production processes,
- artificial intelligence and machine learning - enabling automatic analysis and processing of data, which speeds up and improves production processes,
- augmented reality - enabling the creation of interactive and integrated environments in which people and machines 'work' together,
- the Internet of Things (IoT) enabling real-time monitoring of production processes from anywhere on Earth, making it possible, for example, to react quickly to problems,
- big data technologies enabling the storage, processing and analysis of the vast amounts of data generated by production processes and IoT systems,
- ecological and sustainable production.

Industry 4.0, associated with the introduction of advanced technologies and innovative solutions, places new demands on employees (Wiśniewska-Szałek, Aneta Broniszewska, 2021). Employees must be flexible and ready to adapt to changing working conditions. Industry 4.0 is characterised by rapid technological development and dynamic production processes. Employees should therefore be open to new technologies and ready to learn new skills to function effectively in this environment (de Assis Dornelles et al., 2022). Closely related to this is also the requirement for continuous improvement. In Industry 4.0, innovation and technological advances are inherent. Employees should be open to continuous improvement of their skills, both technical and communication (Morrar et al., 2017; Wróbel-Lachowska et al., 2018). They can attend trainings, courses, conferences and gain knowledge about the latest technologies and trends in the industry. They should also be characterised by creativity and innovation. Technologies such as artificial intelligence, automation and robotics open up new possibilities that can be used to improve production processes and solve problems efficiently. Employees should be willing to think outside the box and take risks in finding new ways to increase productivity, improve quality and create innovative products. They should also have a solid understanding of modern technologies such as artificial intelligence, robotics, Internet of Things, data analytics, etc. They should be able to use these technologies in their work and realise their potential and benefits for production processes. Along with new technologies comes the ability to work with data. Industry 4.0 generates huge amounts of data, which is a valuable source of information. Employees should be able to collect, analyse and interpret data in order to make informed business decisions. Understanding data analysis and being able to use analytical tools are extremely important (Benesova, Tupa, 2017).

Additionally, employees in Industry 4.0 should be able to work in teams, as the integration of different technologies and processes requires the collaboration of many specialists. The ability to communicate, collaborate and problem-solve effectively in a group is crucial for success (Wolf et al., 2018).

It is also worth emphasising that employees in should have an awareness of sustainability and social responsibility. Industry 4.0 seeks to minimise environmental impact and promote sustainable practices. Employees should be aware of these issues and strive to implement solutions that take environmental and social aspects into account (Kamble et al., 2018; Buhr, 2015).

In Industry 4.0, technicians play a key role in maintaining, configuring, programming and operating the advanced technologies used in manufacturing processes. Their technical skills, knowledge and ability to react quickly to changing technological conditions are essential to ensure the effective functioning of modern industry (Ulewicz, Sethanan 2019). Among the most important professions, the researchers mention first and foremost maintenance technicians responsible for monitoring, maintaining and repairing machinery and equipment used in production processes. They should be specialists in diagnosing faults, carrying out preventive maintenance and repairs to ensure the continuity of the production line. No less important is the role of IT technicians who are involved in the configuration, programming and integration of the various IT systems and technologies to ensure that communication between them runs smoothly. They are responsible for the creation and configuration of interfaces, communication protocols and the integration of various devices and modules, but also for the installation, configuration and management of computer networks, ensuring the secure and reliable connection of devices, systems and sensors within the network infrastructure including IoT systems (Vermesan, Friess, 2014). Automation technicians, responsible for the design, installation, programming and maintenance of automation systems, robotics technicians, responsible for the operation, programming and maintenance of industrial robots, also play an important role in the production system. They are specialists in the calibration, motion programming, diagnosis and repair of robots, which are widely used in various stages of production processes. There is also an emerging need for new skills related, for example, to 3D printing or vision systems using image processing, pattern recognition and visual analysis to monitor and control manufacturing processes (Bhatia, 2015; Koh et al., 2017).

The above considerations show that occupations that involve making products themselves are losing ground. It is becoming increasingly difficult for unskilled people, who can be quickly trained to do simple manual work, to find a place in the labour market and, as analyses of the labour market show, they are less and less attractive to young people (Chou et al., 2018; Zawłocki et al., 2016).

In order to prepare young people for the requirements of modern industrial plants, it is necessary to start specialised education already at the secondary education stage - in trade schools and technical schools (Pfeiffer, 2015; Zawłocki, Niewiadomski, 2016). As reports of companies dealing with employee recruitment show, for many years the industry, both global and Polish, has been facing a shortage of skilled manual workers, technicians, IT specialists and engineers. These occupational groups top the ranking of sought-after employees year after year (Manpowergroup, 2020).

3. Methods

According to the Ministry of Education and Science's classification of occupations of vocational education, there are 32 vocational branches in Poland (Ministry of Education and Science, 2023). Within the individual trades, it is possible to study 215 occupations in first- and second-level trade schools, technical schools, post-secondary schools and further education courses. For the purposes of this analysis, only those occupations were selected whose acquisition is associated with the completion of a 5-year technical school (Magnowski, 2020). After taking this criterion into account, 97 professions were identified, falling into 30, the following industries:

- audiovisual industry,
- construction industry,
- ceramics and glazing industry,
- chemical industry,
- wood and furniture industry,
- the economic and administrative sector,
- the electricity industry,
- the electronics and mechatronics industry,
- the hairdressing and cosmetics industry,
- the mining and drilling industry,
- trade industry,
- the hospitality and tourism industry,
- forestry industry,
- mechanical engineering,
- the precision mechanics industry,
- the metal industry,
- the automotive industry,
- the horticulture industry,
- the healthcare industry,
- the printing industry,
- the fashion industry,
- agriculture and livestock industry,
- fishing industry,
- the shipping and logistics industry,
- food industry,
- ICT industry,
- the road transport industry,

- the rail transport industry,
- the air transport industry,
- water transport industry.

Based on the literature review, industries that are directly or indirectly useful for the functioning and development of Industry 4.0 were selected for further analysis (Panasiuk, Kaczmarek, 2018; Kuper, 2020). These are:

- electricity industry,
- electronics and mechatronics industry,
- mechanical engineering industry,
- precision mechanics industry,
- ICT industry.

Within the above-mentioned industries, 15 professions were distinguished, among which the most relevant are:

- automation technician,
- electronics technician,
- electrical technician,
- energy technician,
- IT technician,
- mechanical technician,
- mechatronics technician,
- robotics technician,
- optical technician,
- programming technician,
- broadband electronic communications technician,
- ICT technician,
- telecommunications technician.

In order to meet the first intermediate objective, the information contained in the core curricula was analysed for the above-mentioned professions. Education in the professions is based on the core curricula developed for each profession by the Ministry of Education and Science (2021). The core curricula include the following:

- learning objectives,
- vocational qualifications and the sub-qualifications contained therein,
- learning outcomes and criteria for their verification,
- training delivery conditions,
- minimum number of training hours.

All the information contained in the curricula was analysed, but the main focus was on the qualifications that technical graduates should acquire.

Industry education distinguishes between single- or dual-qualification occupations, with single-qualification occupations being primarily occupations taught in first-level industry schools. Occupations taught in technical schools are dual-qualification occupations. The first qualification usually corresponds to a qualification acquired in an upper-level trade school and provides a foundation for the second qualification. The second, higher qualification is specific to a particular profession acquired at a technical school.

Table 1 presents qualifications used to describe the analysed professions (according to the Classification of Professions in Industry Education).

Table 1.
Qualifications for selected professions

Industry	Profession	Qualification
electronics and mechatronics	automation technician	Installation, commissioning and operation of industrial automation systems
		Operation of industrial automation systems
	electronics technician	Assembling and installation of electronic systems and equipment
		Operation of electronic equipment
	mechatronics technician	Assembly, commissioning and maintenance of mechatronic devices and systems
Operation and programming of mechatronic devices and systems		
robotics technician	Assembly, commissioning and maintenance of robotics systems	
	Operation and programming of robotics systems	
electricity	electrical technician	Installation, commissioning and maintenance of electrical plant, machinery and equipment
		Operation of electrical machinery, equipment and installations
	energy technician	Assembly, commissioning and operation of installations and transmission units in power systems
		Assembly, commissioning and operation of installations and generating units in energy systems
mechanical engineering	mechanical technician	Assembly and operation of machinery and equipment
		Operation of machine tools
		Making and repairing machine elements, devices and tools
		Organisation and supervision of production processes for machinery and equipment
precision mechanics	optical technician	Assembly and repair of optical components and systems
		Production and repair of visual aids
ICT	IT technician	Administration and operation of computer systems, peripheral equipment and local area networks
		Creation and administration of websites and web applications and databases
	programming technician	Creation and administration of websites and web applications and databases
		Design, programming and testing of applications
	broadband electronic communications technician	Installation and operation of in-building installations for satellite, cable and terrestrial television
		Installation and operation of non-building broadband cable networks
	ICT technician	Installation and configuration of local computer networks and administration of operating systems
		Operation and configuration and administration of wide area networks
	telecommunications technician	Installation and maintenance of telecommunications lines and subscriber equipment
		Installation and maintenance of telecommunications networks

Based on the data in Table 1, 27 professional qualifications have been identified (one of them is repeated in 2 occupations: IT technician and programming technician).

Each partial professional qualification is described by a set of expected learning outcomes, which define: knowledge, professional skills and personal and social competences. All learning outcomes are contained in the following groups:

- occupational health and safety,
- training achievements typical for the given qualification,
- vocational foreign language,
- personal and social competences,
- organisation of work of small teams.

For example, for the profession of Automation Technician we can distinguish:

- 2 qualifications in which 15 partial qualifications are included,
- 114 learning outcomes for all partial qualifications,
- 457 verification criteria for 114 training achievements.

Curriculum bases for all 15 professions included in Table 1 were analysed.

The next stage of the research was to fulfil the second intermediate objective. To establish how schools describe their educational offerings to potential candidates, i.e. primary school graduates. The focus here was on information that would identify any links to the concept of Industry 4.0. Here, information was expected on whether the proposed profession corresponds to the requirements for Industry 4.0 employees, whether it prepares graduates to work with intelligent technologies in the factories of the future.

On the basis of the data contained in the Register of Schools and Educational Establishments (Wyszukiwarka Rejestru Szkół i Placówek Oświatowych – rsपो.gov.pl), 987 establishments providing education in occupations requiring education in a 5-year technical school were identified. The analysis of the information consisted in reviewing the content of educational offers contained on the websites of individual schools.

4. Results

Considering the 15 selected occupations, all 27 qualifications were analysed together with their learning outcomes and verification criteria (approximately 450 criteria per occupation). Among all criteria, the term 'Industry 4.0' occurred only once. The identified entry can be found in the core curriculum of the profession of robotics technician, in the qualification "Assembly, commissioning and operation of robotics systems". One of the learning outcomes reads: "characterises the use of robots in the context of Industry 4.0 and 5.0 and artificial intelligence".

However, it should be noted that this learning outcome is typically theoretical, as we find the following verification criteria in its qualification criteria:

- describes the elements of Industry 4.0 and 5.0,
- describes the concept of artificial intelligence,
- lists the opportunities and risks associated with the application of artificial intelligence in robotics systems.

Thus, it is not related to any practical skills of the graduate, but only approximates the student's general knowledge of the concept of Industry 4.0. Taking into account all occupations, the acquisition of which is associated with the graduation from a 5-year technical school, one occupation "robotics technician" represents only 1% of all occupations.

It is noteworthy that the profession of robotics technician is a relatively recent addition to the educational space, as it was not established until 2021, despite the fact that the world has already been in the so-called phase III of robotisation since around 1979, characterised by a rapid development of robotisation, an increase in the number of manufacturers, customers, new models and applications (Żurek, 2004).

In the remaining core curricula for the other analysed professions in which education is provided in 5-year technical schools, there is no mention of the idea of Industry 4.0.

Analysis of the Register of schools and educational establishments maintained by the Ministry of Education and Science showed that only about 85% of the 987 establishments running schools based on 5-year technical schools have websites notified to the database and functioning. 429 pages, or about 43%, were analysed, focusing on the description of the professions offered in the schools' educational offers. As a result of this work, only one entry was found in the description of a mechatronic technical school, stating that graduates are prepared to work in factories based on the concept of Industry 4.0. In the remaining cases, there were no references to the concept of Industry 4.0 in the description of professions.

5. Conclusions and discussions

The modern world is developing and changing at an alarming rate. Technological advances, global social and environmental challenges and the unpredictability of the labour market are creating new challenges for young people. This is why it is so important to encourage them to choose the professions of the future. Only those who are well-prepared and possess skills related to new technologies will be confident in the labour market of the future. Occupations related to new technologies and innovation often offer attractive working conditions, great career opportunities and higher salaries. Encouraging young people to enter these professions allows them to build a stable and rewarding career path (Blanco et al., 2019).

With these technological advances, companies in various sectors are increasingly relying on professionals with knowledge and skills in these fields. It is therefore important that vocational education responds appropriately to these changes and prepares young people for the industries of the future.

The main research objective was to answer the question to what extent the assumptions of the Industry 4.0 concept are present in Polish secondary technical education. It was realised through two intermediate objectives: to identify and characterise information on Industry 4.0 found in the core curriculum for secondary schools and to identify and characterise information on Industry 4.0 found on the websites of selected secondary technical schools.

Many technical schools offer subjects related to programming, electronics, automation or computer networks. However, there is a need to continually update these programmes to reflect the latest trends and technologies. It is particularly important to introduce subjects related to artificial intelligence, data analytics and IoT, which are increasingly important in industry and services.

Analysing the curricula, it is noticeable that there are virtually no references to the idea of Industry 4.0. The concept of the latest industrial revolution is absent from the current curricula of secondary technical schools. With one exception (robotics technician), students are not taught about the concept of Industry 4.0. No links are shown between the competences acquired in the course of education and the requirements placed on workers by modern factories.

It is also worth emphasising the importance of promoting the professions of the future to young people. Informing and educating students about the career prospects associated with modern technologies can induce them to choose a career path in line with the needs of the future labour market. Information campaigns, educational fairs and mentoring programmes can help young people to make an informed decision about their future career.

Analysing the websites of secondary technical schools, it is noticeable that references to the fourth industrial revolution are not encountered in the areas concerning educational offerings. Technical schools do not promote their fields of study in relation to the idea of Industry 4.0. Candidates reading the educational offer will not learn that the professions they plan to choose will give them the opportunity to be employed in the factories of the future, and that their competences will meet the requirements of Industry 4.0 employees.

Based on the observations resulting from the analysis of the information contained in the curricula and on the websites, the following necessary recommendations can be made:

- ongoing updating of existing curricula so that they provide a viable response to the changing labour market and advances in manufacturing technologies and work organisation,
- promoting on the websites of schools those curricula which educate in the professions expected by modern industry with a particular focus on the concept of Industry 4.0,

- use of websites of educational institutions not only as an information medium, but above all as a form of promotion of modern, innovative professions, corresponding to contemporary requirements of modern industry.

Choosing professions related to new technologies, innovation, global social and environmental challenges and the growing needs of society will allow young people to be flexible, innovative and competitive in the labour market of the future. Encouraging them to enter such professions will provide them with career satisfaction, stability and growth prospects. It is therefore worth investing in education, career orientation and the promotion of the professions of the future in order to provide young people with the best possible opportunities for development in a dynamic and unpredictable world of work.

Acknowledgements

This research was funded by Silesian University of Technology, Poland, grant number 13/010/BK_22/0065.

References

1. Alcácer, V., Cruz-Machado, V. (2019). Scanning the industry 4.0: A literature review on technologies for manufacturing systems. *Engineering science and technology, an international journal*, 22(3), 899-919.
2. Benesova, A., Tupa, J. (2017). Requirements for Education and Qualification of People in Industry 4.0. *Procedia Manufacturing*, 11, 2195-2202, 10.1016/j.promfg.2017.07.366.
3. Bhatia, U. (2015). 3D printing technology. *International Journal of Engineering and Technology Research*, 3(2), 327-330.
4. Blanco, E., Schirmbeck, F., Costa, C. (2019). Vocational Education for the Industrial Revolution. *Smart Industry & Smart Education: Proceedings of the 15th International Conference on Remote Engineering and Virtual Instrumentation*, 15, 649-658.
5. Broy, M. (2010). *Cyber-Physical Systems. Innovation Durch Software-Intensive Eingebettete Systeme*. Monachium: Springer.
6. Buhr, D. (2015). *Social Innovation Policy for Industry 4.0*. Tübingen: Eberhard Karls University of Tübingen.
7. Chou, C. M., Shen, C.H., Hsiao, H.C., Shen, T.C. (2018). Industry 4.0 manpower and its teaching connotation in technical and vocational education: Adjust 107 curriculum reform. *International Journal of Psychology and Educational Studies*, 5(1), 9-14.

8. de Assis Dornelles, J., Ayala, N.F., Frank, A.G. (2022). Smart Working in Industry 4.0: How digital technologies enhance manufacturing workers' activities. *Computers & Industrial Engineering*, 163, 107804.
9. Forcina, A., Falcone, D. (2021). The role of Industry 4.0 enabling technologies for safety management: A systematic literature review. *Procedia computer science*, 180, 436-445.
10. Gajek, A., Fabiano, B., Laurent, A., Jensen, N. (2022). Process safety education of future employee 4.0 in Industry 4.0. *Journal of Loss Prevention in the Process Industries*, 75, 104691.
11. Holub, O., Hammer, M. (2017). Diagnostics and maintenance of machine tool spindles – new views. *MM Science Journal*, 11, 2094-2099.
12. Kamble, S.S., Gunasekaran, A., Gawankar, S.A. (2018). Sustainable Industry 4.0 Framework: A Systematic Literature Review Identifying the Current Trends and Future Perspectives. *Process Safety and Environmental Protection*, 117, 408-425, 10.1016/j.psep.2018.05.009.
13. Kamiński, A. (2018). „Inteligentna fabryka” – nowe trendy w rozwoju systemów informatycznych dla przemysłu. *Zarządzanie i Finanse – Journal of Management and Finance*, 16, 3(2), 113-122.
14. Koh, L., Orzes, G., Jia, F.(J). (2019). The Fourth Industrial Revolution (Industry 4.0): Technologies Disruption on Operations and Supply Chain Management. *International Journal of Operations & Production Management*, 39, 6/7/8, 817-828, 10.1108/IJOPM-08-2019-788.
15. Kuper, H. (2020). Industry 4.0: changes in work organization and qualification requirements – challenges for academic and vocational education. *Entrepreneurship Education*, 3, 119-131.
16. Liao, Y., Deschamps, F., Loures, E.D.F.R., Ramos, L.F.P. (2017). Past, Present and Future of Industry 4.0 – A Systematic Literature Review and Research Agenda Proposal. *International Journal of Production Research*, 55(12), 3609-3629, 10.1080/00207543.2017.1308576.
17. Magnowski, T. (2020). *Informator o zawodach szkolnictwa branżowego*. Warszawa: Ośrodek Rozwoju Edukacji.
18. Manpowergroup (2020). *Niedobór talentów 2020*. Retrieved from: https://www.manpowergroup.pl/wp-content/uploads/2020/02/Rozwiazanie_problemu_niedoboru_talentow_PL-1.pdf, 10.10.2021.
19. Ministerstwo Edukacji i Nauki (2021). *Rozporządzenie Ministra Edukacji i Nauki z dnia 28 maja 2021 r. zmieniające rozporządzenie w sprawie podstaw programowych kształcenia w zawodach szkolnictwa branżowego oraz dodatkowych umiejętności zawodowych w zakresie wybranych zawodów szkolnictwa branżowego*. Dz.U. 2021, poz. 1087.

20. Ministerstwo Edukacji i Nauki (2023). *Rozporządzenie Ministra Edukacji i Nauki z dnia 18 stycznia 2023 r. zmieniające rozporządzenie w sprawie ogólnych celów i zadań kształcenia w zawodach szkolnictwa branżowego oraz klasyfikacji zawodów szkolnictwa branżowego*. Dz.U. 2023, poz. 183.
21. Morrar, R., Arman, H., Mousa, S. (2017). The Fourth Industrial Revolution (Industry 4.0): A Social Innovation Perspective. *Technology Innovation Management Review*, 7, 12-20.
22. Panasiuk, J., Kaczmarek, W. (2018). Zapewnienie ciągłości edukacji technicznej w kontekście wymagań Przemysłu 4.0. *Napęd i Sterowanie*, 6, 80-85.
23. Pereira, A.C., Romero, F. (2017). A review of the meanings and the implications of the Industry 4.0 concept. *Procedia Manufacturing*, 13, 1206-1214.
24. Pfeiffer, S. (2015). *Effects of Industry 4.0 on vocational education and training*. Vienna: Institute of Technology Assessment.
25. Rosin, F., Forget, P., Lamouri, S., Pellerin, R. (2020). Impacts of Industry 4.0 technologies on Lean principles. *International Journal of Production Research*, 58(6), 1644-1661.
26. Schwab, K. (2016). *The Fourth Industrial Revolution*. World Economic Forum.
27. Ulewicz, R., Sethanan, K. (2019). *Quality of Educational Services – Industry 4.0 Requirements*. 20th International Symposium on Quality Kvaliteta–Jučer, Danas, Sutra/Quality – Yesterday, Today, Tomorrow. Hrvatska, Pula, 137-149, 10.11222/020.01.011.19.
28. Vermesan, O., Friess, P. (2014). *Internet of Things. From Research and Innovation to Market Deployment*. Denmark: River Publishers.
29. Wang, Y., Ma, H.-S., Yang, J.-H., Wang, K.-S. (2017). Industry 4.0: a way from mass customization to mass personalization production. *Advances in Manufacturing*, 5, 311-320.
30. Wiśniewska-Sałek, A., Broniszewska, A. (2021). Przemysł 4.0 – analiza potencjału pracodawcy. In: A. Woźny, R. Dwornicka (eds.), *Multidyscyplinarne aspekty zarządzania produkcją i usługami* (pp. 59-71). Kraków: Wydawnictwo PK.
31. Wolf, M., Kleindienst, M., Ramsauer, C., Zierler, C., Winter, E. (2018). Current and future industrial challenges: demographic change and measures for elderly workers in industry 4.0. *Annals of the Faculty of Engineering Hunedoara*, 16(1), 67-76.
32. Wortmann, F., Flüchter, K. (2015). Internet of things: technology and value added. *Business & Information Systems Engineering*, 57, 221-224.
33. Wróbel-Lachowska, M., Wiśniewski, Z., Polak-Sopinska, A. (2018). The role of the lifelong learning in logistics 4.0. *Advances in Human Factors in Training, Education, and Learning Sciences: Proceedings of the AHFE 2017 International Conference on Human Factors in Training, Education, and Learning Sciences*, July 17-21, 2017. Los Angeles: Springer International Publishing, 402-409.
34. *Wyszukiwarka Rejestru Szkół i Placówek Oświatowych*. Retrieved from: <https://rspo.gov.pl/>, 21.02.2022.

35. Zasadzień, M. (2022). Education at technical secondary schools for the needs of Industry 4.0 in Poland with particular consideration of the Śląskie voivodship. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, 161, 349-364. <https://doi.org/10.29119/1641-3466.2022.161.23>.
36. Zawłocki, I., Nieroba, E., Niewiadomski, K. (2015). Preferowane modele kształcenia zawodowego w średnim i wyższym szkolnictwie w Polsce. *Edukacja – Technika – Informatyka*, 1(11), 136-141.
37. Zawłocki, I., Niewiadomski, K. (2016). Optymalne ścieżki kształcenia prowadzące do uzyskania pełnych kompetencji zawodowych. *Edukacja – Technika – Informatyka*, 4(18), 164-167.
38. Zezulka, F., Marcon, P., Vesely, I., Sajdl, O. (2016). Industry 4.0 – An Introduction in the phenomenon. *IFAC-PapersOnLine*, 49, 25, 8-12.
39. Żurek, J. (2004). *Podstawy robotyzacji*. Poznań: Wydawnictwo Politechniki Poznańskiej.