

e-ISSN 2300-9918

HUMANITIES | AND SOCIAL | SCIENCES |

Research Journal 30
Quarterly No. 3 (2023)
(July-September)

Volume Editor
Elżbieta Kurzępa-Piękoś

HSS Journal indexed, among others, on the basis of the reference of the Minister of Science and Higher Education in The Central European Journal of Social Sciences and Humanities (CEJSH), ERIH PLUS, DOAJ, EBSCO and Index Copernicus Journal Master List 2020.

Issued with the consent of the Rector

Editor in Chief
Publishing House of Rzeszów University of Technology
Lesław GNIEWEK

EDITORIAL BOARD

Editor-in-Chief
Grzegorz OSTASZ

Deputy of Editor-in-Chief
Justyna STECKO

Editorial assistant
Elżbieta KURZĘPA-PIĘKOŚ

Associate Editors
Eugeniusz MOCZUK, Tadeusz OLEJARZ, Marta POMYKAŁA
Grzegorz ROSŁAN, Beata ZATWARNICKA-MADURA, Dominik ZIMON

Scientific Board
Alla ARISTOVA (Ukraine), Heinrich BADURA (Austria), Guido BALDI (Germany)
Aleksander BOBKO (Poland), Zbigniew BOCHNIARZ (The USA), Viktor CHEPURKO (Ukraine)
Zuzana HAJDUOVÁ (Slovakia), Wilem J.M. HEIJMAN (The Netherlands)
Tamara HOVORUN (Ukraine), Paweł GRATA (Poland)
Beatriz Urbano LOPEZ DE MENESES (Spain), Aleksandr MEREZHKO (Ukraine)
Nellya NYCHKALO (Ukraine), Krzysztof REJMAN (Poland)
Annely ROTHKEGEL (Germany), Josef SABLIK (Slovakia), Mykoła STADNIK (Ukraine)
Anatoliy TKACH (Ukraine), Michael WARD (Ireland), Natalia ZHYHAYLO (Ukraine)

Statistical editor
Tomasz PISULA

Language editors
E-CORRECTOR
Magdalena REJMAN-ZIENTEK, Piotr CYREK

Volume editor
Elżbieta KURZĘPA-PIĘKOŚ (Poland)

Project of the cover
Damian GĘBAROWSKI

The issue 3/2023 of the journal HUMANITIES AND SOCIAL SCIENCES was published during the implementation of the project "Development of scientific journals" under which it received financial support in the amount of PLN 80,000.

The electronic version of the Journal is the final, binding version.

e-ISSN 2300-9918

Publisher: Publishing House of Rzeszów University of Technology,
12 Powstańców Warszawy Ave., 35-959 Rzeszów (e-mail: oficyna@prz.edu.pl)
<http://oficyna.prz.edu.pl>

Editorial Office: Rzeszów University of Technology, The Faculty of Management,
10 Powstańców Warszawy Ave., 35-959 Rzeszów, phone: 17 8651383, e-mail: zeszyty@prz.edu.pl
<http://hss.prz.edu.pl>

Additional information and an imprint – p. 217

CONTENTS

From the Editorial Committee	5
Renata BRAJER-MARCZAK, Katarzyna PIWOWAR-SULEJ: Green human resource management as an element of green business process management	7
Izabela A. KOŁODZIEJ: Ecological entrepreneurship in wine-producing micro-enterprises in the Lower Silesian Voivodeship	19
Igor KRAVCHUK: The banking system of Ukraine in wartime	37
Ahmed NAAYIF: A conceptual model to analyze the effectiveness of international cooperation between organizations in combating illicit drug trafficking across borders	49
Jagoda OCHOCKA: What is the meaning of the experience for value? – experience co-creation as its determinant	61
Grażyna OSBERT-POCIECHA: Management in a dynamically changing reality: consequence versus non-consequence	75
Leszek PAWLIKOWICZ: The organisational status of special forces in the armed forces of NATO states	89
Magdalena REDO: The higher valuation of investment risk and more expensive capital in Poland as a threat to the development of Polish enterprises	103
Grzegorz ROSŁAN: A description of military threats to Poland's air safety	117
Mirosław SOLTYSIAK, Dariusz ZAJĄC: Changes in the financial situation of municipalities without powiat rights in Poland in the years 2010–2021 ..	127
Hanna SOMMER, Grzegorz ZAKRZEWSKI: A culture of security versus digital exclusion as a form of social exclusion	141
Magdalena SZYDEŁKO, Marek WOŹNY: Measuring the quality of logistics services for individual customers using the SERVQUAL method with an exemplary company from the CEP industry	153
Andrei TSIMAYEU: An assessment of intentions and attitudes among entrepreneurs of generation Alpha	163

Magdalena WIERCIOCH: The non-financial results of supporting enterprises of the aviation valley using public funds for research, development and innovation	173
Jinyue YANG: The implementation of corporate social responsibility (CSR) by DHL and SF-Express: a comparative analysis in Germany and China ...	185
Jolanta ZAWORA: The financial condition of local government units in Poland in the light of the changes in the economic situation	201
Additional Information	217

FROM THE EDITORIAL COMMITTEE

We are giving you the next 30th 3 (2023) issue of the Scientific Journal of the Faculty of Management at the Rzeszow University of Technology entitled “Humanities and Social Sciences”.

The aim of the Publisher is to raise the merits and the international position of the quarterly published by the Faculty of Management, that is why we are still developing the cooperation with foreign team of reviewers, as well as an international Scientific Council. The Editors have also attempted to apply for international databases; currently the quarterly HSS is indexed in **Index Copernicus Journal Master List, The Central European Journal of Social Sciences and Humanities (CEJSH) ERIH PLUS, DOAJ and EBSCO**.

The Journal has been also included in the list of projects qualified for funding under the **“Support for scientific magazines program”**.

The articles published in this publication are devoted to the broader issues of the humanities and social sciences. They are the result both of theoretical and empirical research. The subjects covered vary considerably and reflect the interdisciplinary nature of the Journal. We do hope that the papers published will meet your kind interest and will be an inspiration to further research and fruitful discussions.

On behalf of the Editorial Board of “Humanities and Social Sciences” we would like to thank the Authors for sending the outcomes of their research. We would like to express particular gratitude to the Reviewers for their valuable feedback that greatly contributed to increasing values of the scientific publications.

With compliments
Editorial Committee

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.23

Renata BRAJER-MARCZAK¹
Katarzyna PIWOWAR-SULEJ²

GREEN HUMAN RESOURCE MANAGEMENT AS AN ELEMENT OF GREEN BUSINESS PROCESS MANAGEMENT

This study aims to answer the following research question: How can green human resource management (GHRM) spur green business process management (GBPM)? It employs a literature review combined with scientific reflection. This work contributes to the development of knowledge by (1) conducting an analysis and synthesis of literature on GBPM, (2) combining the issue of GBPM with GHRM, and (3) showing directions for future empirical research focusing on the linkage between GBPM and GHRM. To the authors' knowledge, this is the first paper systematically discussing the linkage between GBPM and GHRM.

Keywords: environmental sustainability, sustainable development, narrative literature review, Green BPM, Green HRM

1. INTRODUCTION

The problems associated with global environmental change are so important that all governments, companies and individuals should take action in the area of environmental sustainability. Activities directed towards sustainable development directly affect current generations, their children, and – in general – the future, which has been emphasized by the United Nations (United Nations, 2020).

Issues related to reducing the negative impact of the use of resources in processes on the natural environment have become the subject of business process management (BPM). In response to the assumption that each business process affects the natural environment to some extent (through, e.g., the consumption of energy, water, and other resources; greenhouse gas emissions; waste production, etc.), the concept of "green business process management" (GBPM) was developed. It is associated with such categories as process optimization, process performance measurement methods and process design (Roohy Gohar & Indulska, 2020). According to another definition, GBPM is about understanding,

¹ Renata Brajer-Marczak, Wrocław University of Economics and Business, Poland; e-mail: renata.brajer-marczak@ue.wroc.pl (corresponding author). ORCID: 0000-0003-3920-2016.

² Katarzyna Piwowar-Sulej, Wrocław University of Economics and Business, Poland; e-mail: katarzyna.piwowar-sulej@ue.wroc.pl. ORCID: 0000-0002-4627-4344.

documenting, modeling, analyzing, simulating, and implementing continuous changes in business processes, with particular emphasis on the environmental consequences of process implementation (vom Brocke et al., 2012).

At the same time, little research attention within GBPM has been directed to human resource management (HRM) and organizational culture (Maciel, 2017), although they are factors affecting the knowledge and involvement of employees in Business Process Management and Business Process Improvement. Introducing the Green BPM concept is usually associated with the implementation of two goals: reducing the negative impact on the natural environment and introducing cultural changes that promote specific values and attitudes among the members of the organization (Hernández González et al., 2019).

Organizational sustainable development is also most influenced by employees because the company's success in different domains depends on the employees' awareness, knowledge, motivation and behaviors. To cope with the above-mentioned environmental challenges, the concept of "green HRM" (GHRM) has been introduced. GHRM combines environmental management with human resource management to develop "green" skills and motivate employees to pro-environmental activities (Ren et al., 2020). It covers a set of policies and practices that stimulate green behaviors of a company's employees. Although the main goal of GHRM is the creation of environmental sensitivity and ecologically responsible behaviors of employees in the workplace, employees' pro-environmental attitudes may be transferred to their private life. Moreover, the role of GHRM is to create a participation-oriented culture (Pham et al., 2019).

Although different approaches to defining the scope of GRHM are presented in the literature, this study assumes that GHRM covers functional areas of HRM, such as job design, HR planning, recruitment and selection, HR training, HR appraisal, compensation, and HR flow (Islam et al., 2019; Piwowar-Sulej, 2021a). GHRM derives inspiration from theories and methods of management and economics, sociology and psychology, due to a wide array of correlated questions and issues (Piwowar-Sulej, 2021b). There is also a need for horizontal consistency between the GHRM practices because it increases the effectiveness of the GHRM system (Foss et al., 2015).

This study aims to answer the following research question: How can GHRM spur GBPM? For the purpose of this article literature review combined with scientific reflection were used. Literature reviews are increasingly needed in most scholarly disciplines because of the rapid development of these disciplines. Moreover, literature reviews recapitulate the stand of knowledge on a particular topic and help to avoid unnecessary and unaware duplication of previous research (Baumeister, Leary, 1997; Pautasso, 2019). The latter refers mainly to systematic literature reviews.

Searching on 23th January 2023 on Google for studies which link GBPM with GHRM resulted in no records. Similarly, the implementation of the following searching strategy in the Scopus database (TITLE-ABS-KEY ("green business process management" AND "green human resource management") OR TITLE-ABS-KEY ("green business process management" AND "human resource management")) resulted in no records. Moreover, there are only 30 studies indexed in Scopus which include the "green business process management" term in their title, abstract or keywords. Therefore, this study utilizes a narrative (traditional) literature review defined as a comprehensive, iterative, critical, consistent and objective analysis of the current knowledge on a topic (Juntunen, Lehenkari, 2021). They are an essential part of the research process and help to establish a theoretical framework and focus or context for future research (Pautasso, 2019).

This study, to our knowledge, being the first which discusses the linkage between GBPM and GHRM, contributes to the development of knowledge through (1) analysis and synthesis of literature on GBPM, (2) combining the issue of GPBM with GHRM, (3) showing directions for future empirical research focusing on the linkage between GBPM and GHRM.

2. GENESIS AND SCOPE OF GBPM

One of the first papers on GBPM was published in 2009 in the *Australasian Journal of Information Systems* (Ghose et al., 2010). The subject of GBPM was subsequently developed by other researchers (Nowak et al., 2011; vom Brocke et al., 2012). However, it is still a relatively new BPM approach and an emerging research discipline. Attempts are still being made to define GBPM. On the one hand, GPBM is a new approach to process management, and on the other it is worth emphasizing that it is based on the concept of sustainable development, which is already firmly rooted in the subject of managing organizations.

Due to the fact that every business process in an organization affects the environment to some extent, it is concluded that process management should also be oriented towards environmental sustainability. In the GBPM concept, sustainability is perceived as both the goal of action and a tool for managing changes within the implemented business processes. It is about understanding, documenting, modeling, analyzing, simulating, and implementing continuous changes in business processes, with particular emphasis on the environmental consequences of process implementation (vom Brocke et al., 2012).

Although the first studies on GBPM were presented at conferences and in IT journals, it should be noted that this concept is not only about IS (Information Systems). In addition to IS technology, it strongly refers to the cultural and social dimension of the organization (Couckuyt, Van Looy, 2019; vom Brocke et al., 2012). For this reason, GBPM can be seen as a general management approach (Kuppusamy, Gharleghi, 2015). Unlike Green IS, GBPM focuses primarily on process change that goes beyond IT applications and refers to Business Management in a broader sense (Couckuyt, Van Looy, 2019). Some researchers point to the relationship between GBPM and green supply chain management (Kuppusamy, Gharleghi, 2015). It is also suggested that GBPM be recognized as the sum of all management activities supported by IT systems that help to monitor and reduce the negative impact of business processes on the natural environment at the design, improvement, implementation or operation stage, as well as leading to cultural changes of process performers (Opitz et al., 2014b).

According to another definition, GBPM is a business model that is sustainable with regard to innovations that are introduced in processes and that significantly reduce negative impact on the environment due to changes in value creation (Bocken et al., 2014). In the GBPM, various aspects are taken into account in the process assessment, such as the generation of carbon footprint, energy consumption, water consumption or the generation of waste produced during the performance of business processes and related activities.

In turn, Maciel (2017) defines GBPM as the result of combining the concept of sustainable development and process management. Therefore, it can be defined as process management that generates business value with minimal impact on the environment, and thus does not affect the availability of environmental resources for future generations. GBPM takes place when an organization models, studies and optimizes processes to improve their environmental performance. These works include the optimization of

existing processes, but also the introduction of new, more environmentally friendly ones, which can be based on less resource consumption and reduced carbon dioxide emissions, while at the same time improving the quality of products and/or services offered to the customer (Opitz et al., 2014a).

According to von Rosing et al. (2015) sustainable processes can be achieved by addressing challenges in the following areas: process design, linkage to strategy, engaging roles, appropriate resources, automation, measurement and reporting of results. Due to the fact that environmental goals are often in opposition to classical measures such as time, costs and flexibility (Reijers, Liman Mansar, 2005), the following definition of GBPM is proposed:

GBPM extends the optimization of cost, quality, time, and flexibility of business processes with an environmental sustainability dimension. This means that Green BPM concerns the modeling, deployment, optimization and management of business processes with dedicated consideration paid to their environmental consequences (Couckuyt, Van Looy, 2019).

In practice, GBPM uses well established process management tools, adapting the implementation of processes to the challenges resulting from the currently observed environmental problems. Such approach forces the expansion or adjustment of processes, introducing actions based not only on measurements using classic KPIs (*Key Performance Indicators*), but also KEIs (*Key Ecological Indicators*). In Green BPM, there is a need for new organizational positions, such as sustainability specialists. They should work closely with the management and process contractors. Their tasks are also to determine the appropriate KEIs in relation to the strategic goals of the organization, identify and define appropriate methods for their measurement, obtain information on the impact of the implemented processes on the environment and find appropriate adaptation methods that meet the defined KEIs. A wide range of such indicators is proposed in the literature (Hernández González, 2018), but the most commonly used ones relate to the monitoring of pollutant emissions, energy consumption and material consumption (Hernández González, 2018). Watson et al. (2012) believe that KEIs should exist at the level of activities, processes and entire organizations and refer to the efficiency, costs and quality of the products offered.

Various capabilities that an organization should develop in order to benefit from GBPM are indicated in the literature (Opitz et al., 2014a). Among them are the attitudes of companies' employees. Effective GBPM requires the participation of employees in all its phases and the involvement of the highest level of management (Couckuyt, Van Looy, 2019). It is also related to the critical BPM factors described in the literature (Rosemann, vom Brocke, 2010). With regard to GBPM, the capacity area "Culture" mentions green attitudes and behavior of employees (von Rosing et al., 2015), training programs for employees, green attitudes of enterprises (Kuppusamy, Gharlegghi, 2015). On the other hand, in the area "Structure", there are references to bodies managing environmental awareness (Nowak et al., 2011) and new management bodies or entities (Opitz et al., 2014b). It is assumed that by acquiring appropriate knowledge and skills, employees will be able to introduce pro-ecological changes in processes. However, the basis of long-term GBPM is shaping appropriate values in the company, aimed at a balance between economic, social and environmental goals (Lacy et al., 2010; Stern et al., 1999). In this regard, HR activities undertaken in organizations play an important role. Solutions such as

the appointment of a sustainable development council, sustainable development owners (von Rosing et al., 2015) or a chief environmental/green officer (Opitz et al., 2014a) are proposed.

It can be observed, however, that the literature on GBPM largely focuses on the stages of the BPM life cycle, such as designing, measuring and improving processes, while at the same time little space is devoted to issues of human resources management and organizational culture (Maciel, 2017). According to Couckuyt and Von Looy (2019), there is a lack of research related to people management in GBPM that would refer to employee competencies, training, readiness for change, evaluation and rewards, and top management commitment. More holistic approach is needed in GBPM, therefore it should also take into account cultural, organizational and managerial factors (Roohy Gohar, Indulska, 2020; vom Brocke, Sinnl, 2011). Changing organizational practices and individual behavior towards GBPM requires raising social and individual awareness about the impact of global environmental challenges, along with offering practical solutions for the individual (Nerlich et al., 2010).

3. CORE ELEMENTS OF GHRM

As presented in the Introduction, GHRM covers job design, recruitment and selection (hiring), HR training, HR appraisal, compensation, and HR flow. Job design and HR planning are the bases for other HRM activities. In this case, environmentally-oriented job duties and responsibilities are included in a formal job description. HR planning is focused on determining the quantitative and qualitative dimensions related to future employees (Islam et al., 2019). Green recruitment and selection is designed to provide the company with highly qualified employees, whereas the subsequent practices refer to developing appropriate behaviors among those already employed (Piwowar-Sulej, 2021b)

Recruitment and selection processes enable companies to employ people who will be more likely to behave in an environmentally-friendly manner (Ababneh, 2021). At this stage employers expose their environmental values in job vacancy advertising and verify the candidate's ecological competencies during the recruitment process (Tang et al., 2018).

Green training increases employees' understanding of the needs of the natural environment, as well as develops green skills, attitudes, and behaviors, including green creativity (Perron et al., 2006; Renwick et al., 2013). In the case of new employees, induction training should be organized to facilitate the integration of these employees with the company's green culture and values. Further training should be based on the analysis of employee needs with regard to ecological knowledge and skills. Furthermore, the extant literature emphasizes that green training should be green itself which means, e.g., the reduction of printed didactic materials and introduction of e-learning courses.

Green HR appraisal is aimed at determining employees' performance in terms of their contribution to the achievement of organizational environmental goals (Ababneh, 2021). At this stage employers establish green goals and responsibilities at different levels (e.g., individual, team-related, organizational), conduct environmental audits and provide employees with regular feedback on their progress in attaining green goals (Tang et al., 2018).

Rewards and HR flow (promotion) based on green criteria are expected to motivate employees to become involved in green activities (Chaudhary, 2020). The rewards system should use monetary-based rewards, non-monetary rewards and recognition-based rewards to promote the completion of environmentally-friendly projects, submission of green ideas

and progress in the development of green competencies (Renwick et al., 2013). In turn, green HR flow means taking into account employees' green performance in the decisions related to promotions. Employers should also enable employees to realize a green career in a company (Piwowar-Sulej, 2022).

4. DISCUSSION

As presented above, GBPM focuses on environmentally-friendly business processes. In turn, GHRM is a key tool of introducing sustainability into a company. The latter is a concept that takes into account the environmental context as a basis for decisions in the HRM area. The GHRM concept can be treated as a key tool for introducing GBPM.

BPM requires focusing on methodological, technological and social aspects, which include: process governance, leadership, process competencies of employees, favorable organizational culture and appropriate technology development. The evolution from classic BPM to GBPM can take place in stages. Such transformation should be implemented in a planned and structured manner, taking into account the needs of various stakeholders, including actions addressed to employees. The shift towards GBPM requires that all process improvement initiatives align with the organization's strategic goals and focus on functional strategies, including HRM strategies. There is a close relationship between process architecture, process management across the organization, redesigning business processes in the "green" direction and matching various supporting functions, such as HRM.

Moving to GBPM and institutionalizing it in the longer perspective requires a set of specific governance mechanisms and the definition of new roles, duties, competencies and responsibilities. In addition to classic process owners, GBPM needs a council for sustainable development, sustainable development owners or a chief ecological officer. These mechanisms should be put in place to properly manage the transition from classic to GBPM and coordinate the actions taken and to prevent the formation of the so-called horizontal silos (von Rosing et al., 2015).

The implementation of process management can be carried out in accordance with a specific methodology. Basing further considerations on the BPM Framework (Burlton, 2014), when introducing GBPM, attention should be focused on adjusting the internal organizational structure to business and regulatory requirements, as well as to the requirements of strategic, tactical and operational nature. Both the strategic (strategy, process architecture) and operational (implementation, understanding, development, launching) planes should be taken into account. This methodology can be adapted to the reorganization of the entire organization as well as its parts, e.g. a selected business process or group of processes. For this reason, it can be used with an evolutionary approach to introducing changes in the scope of implemented business processes. It combines methods of change management, quality management, risk management and project management.

The solutions proposed in it stimulate teamwork, internal communication and the development of skills of employees and managers. The methodology consists of two complementary and interrelated components: one related to building process architecture and one associated with rebuilding business processes in connection with IT and HRM methods. Employees' competences, knowledge, experience, potential and motivation to act are among the elements that play an important role at the level of implementing changes in the organization (Jeston, 2014). Taking into account the individual stages, it should be emphasized that the formulation of the strategy, linking it with business processes and

integrating processes with systems, including the HRM system, are of key importance here. The BPM Framework methodology pays attention to three levels of change: organization level, process level and implementation level. The characteristics of individual levels are presented in Table 1.

Table 1. Stages of GBPM Framework – based on BMP Framework

Level	Characteristics
Organization level	Understanding the environmental context as the foundation of change for the organization
	Development of a process model of organization
	Defining new process efficiency measures (KEIs)
	Establishment of GBPM rules
	Matching the capacity of the GBPM organization
	Process management towards GBPM
Process level	Understanding the "green" process
	Analyzing the current process
	Process redesign
	Implementation of changes in the process
Implementation level	Collecting new requirements
	Designing new solutions
	Testing new solutions
	Standardizing new solutions

Source: Authors' own analysis, based on (Burlton, 2014).

Employee training plays a key role at each level (see: Table 2). In this context, GHRM should provide not only knowledge in the field of environmental protection, but also knowledge in process management (with particular emphasis on the process improvement stage). These may include training in process improvement tools and techniques, training in IT applications, training for continuous improvement, cultural training, process redesign patterns, problem solving techniques, etc. There are various training formats for GBPM initiatives, for example, they can be standard training exercises, training with experienced professionals, training initiated by feedback from leaders, employees, etc. The issue to be considered is who should be trained at each stage of the GBPM implementation. In particular, when to include department managers, process owners and line workers in the training. Training is associated with considerable expenses, and for many organizations this can be a major challenge when implementing GBPM. Lack of proper preparation of employees and difficulties in understanding and applying GBPM techniques and methods can be critical to the success of implementing changes.

As presented in Table 2, there are numerous areas to extend GHRM in a company that would like to successfully implement GBPM. At this point it is worth mentioning that GHRM is one of the processes. Therefore, it can be a subject of improvements within GBPM.

Table 2. Extension of GHRM in the context of GBPM

Element GHRM	Context of GBPM
job design	duties which go beyond pro-environmental behaviors and cover, i.e., process design, process improvement
recruitment and selection	selection criteria include beyond green awareness also the knowledge and skills related to BPM
HR training	training linking green knowledge and skills with BPI
HR appraisal	appraisal criteria include not only green general behaviors but the employee contribution in terms of EPI
compensation	linking rewards and benefits with employee engagement in process improvement (implemented green ideas submitted by employees)
HR flow	introducing not only the possibility to take green positions (in terms of green jobs) but also positions such as green process officer green process leader, green process owner

Source: own study.

5. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

This article highlights that there is a research gap in literature in terms of linking GBPM and GHRM. Based on the narrative literature review, it also presents the genesis and scope of GBPM as well as the main elements of GHRM. The authors combined these two theoretical concepts, considering that: (1) the effective implementation of GBPM needs qualified and motivated employees, (2) GHRM in a company which implements GBPM should not only develop ecological mindset of employees but also knowledge, skills and motivation related to management of processes. One can state that both these concepts are interrelated. GHRM can be enriched by issues associated with BPM. The presented theoretical considerations should be further explored empirically.

It can be said that the higher the ecological awareness of the society, the more green actions can be expected from employers, but also from producers and service companies. In the near future, every HRM department will probably employ specialists in the field of GHRM or sustainability issues. As the current study shows, GBPM specialists will also be needed in the future. Implementing GBPM is a complex undertaking that poses a great challenge for the entire organization. There is, therefore, a high demand for management staff with deep expertise in the design, implementation and improvement of processes (von Rosing et al., 2015). A key role in this regard may also be played by regulations enforcing certain ways of implementing business processes.

Although this study contributes to the development of both GBPM and GHRM concepts, it has some limitations. They can be, however, eliminated in future studies. First, this study analyzed solely the traditional elements of GHRM. Future studies should also cover the issues of leadership and organizational culture. Green leadership is necessary for the effective implementation of GBPM, because it is accompanied by the introduction of significant changes in the way employees think and act. Without strong leadership, the introduction of GBPM has no chance of success, while without management commitment, the GBPM will not deliver the expected results. If management does not appreciate the green approach, employees will be less likely to engage in new solutions. It should also be defined and presented to employees how the GBPM aligns with the strategy and objectives of the organization, as well as what impact it has on operational management and individual

job positions. In turn, green organizational culture is an element of organizational culture (e.g., values, norms) that reflects the organization's environmental concerns. The level of green organizational culture is influenced by all of the above-mentioned organizational practices (included in both GBPM and GHRM) and individual characteristics presented by employees (Piwowar-Sulej, 2021b).

Second, BPM Framework emphasizes that not only the development of green knowledge and skills but also green technologies are needed. Therefore, the technical side of the GBPM implementation (also linked with GHRM) is another promising research gap to be filled in future studies.

REFERENCES

- Ababneh, O.M.A. (2021). *How do green HRM practices affect employees' green behaviors? The role of employee engagement and personality attributes*. "Journal of Environmental Planning and Management", 64(7). DOI: 10.1080/09640568.2020.1814708.
- Baumeister, R.F., Leary, M.R. (1997). *Writing Narrative Literature Reviews*. "Review of General Psychology", 1(3). DOI: 10.1037/1089-2680.1.3.311.
- Bocken, N.M.P., Short, S.W., Rana, P., Evans, S. (2014). *A literature and practice review to develop sustainable business model archetypes*. "Journal of Cleaner Production", 65. DOI: 10.1016/j.jclepro.2013.11.039.
- Burlton, R.T. (2014). *Delivering business strategy through process management* [In:] vom Brocke, J., Rosemann, M., eds., *Handbook on business process management: Introduction, methods, and information systems*. Hamm: Springer.
- Chaudhary, R. (2020). *Green Human Resource Management and Employee Green Behavior: An Empirical Analysis*. "Corporate Social Responsibility and Environmental Management", 27(2). DOI:10.1002/csr.1827.
- Couckuyt, D., Van Looy, A. (2019). *Green BPM as a Business-Oriented Discipline: A Systematic Mapping Study and Research Agenda*. "Sustainability", 11(15). DOI:10.3390/su11154200.
- Foss, N.J., Pedersen, T., Reinholt Fosgaard, M., Stea, D. (2015). *Why Complementary HRM Practices Impact Performance: The Case of Rewards, Job Design, and Work Climate in a Knowledge-Sharing Context*. "Human Resource Management", 54(6). DOI:10.1002/hrm.21649.
- Ghose, A., Hoesch-Klohe, K., Hinsche, L., Le, L.-S. (2010). *Green Business Process Management: A Research Agenda*. "Australasian Journal of Information Systems", 16(2). DOI:10.3127/ajis.v16i2.597.
- Hernández González, A., Calero, C., Pérez Parra, D., Mancebo, J. (2019). *Approaching Green BPM characterisation*. "Journal of Software: Evolution and Process", 31(2). DOI:10.1002/smr.2145.
- Islam, M.M., Islam, J., Pervez, A.K.M.K., Nabi, N. (2019). *Green HRM and Green Business: A Proposed Model for Organizational Sustainability*. "Environmental Management and Sustainable Development", 8(3). DOI:10.5296/emsd.v8i3.14926.
- Jeston, J. (2014). *Business Process Management*. New York: Routledge. DOI:10.4324/9780203081327.
- Juntunen, M., Lehenkari, M. (2021). *A narrative literature review process for an academic business research thesis*. "Studies in Higher Education", 46(2). DOI:10.1080/03075079.2019.1630813.

- Kuppusamy, M., Gharleghi, B. (2015). *Green Business Process Management* in *Manufacturing Firms: Examining the Role of Upstream and Downstream Suppliers*. "International Journal of Applied Business and Economic Research", 13(1).
- Lacy, P., Cooper, T., Hayward, R., Neuberger, L. (2010). *A New Era of Sustainability*. UN Global Compact-Accenture CEO Study 2010 [Access: 18.06.2023]. Access on the internet: <https://www.compromisorse.com/upload/estudios/000/53/AccentureUNGCStudy10.pdf>.
- Maciel, J.C. (2017). *The Core Capabilities of Green Business Process Management – A Literature Review*. Proceedings of the International Conference on Wirtschaftsinformatik. St. Gallen, Switzerland.
- Nerlich, B., Koteyko, N., Brown, B. (2010). *Theory and language of climate change communication*. "WIREs Climate Change", 1(1). DOI:10.1002/wcc.2.
- Nowak, A., Leymann, F., Schumm, D. (2011). *The Differences and Commonalities between Green and Conventional Business Process Management*. IEEE Ninth International Conference on Dependable, Autonomic and Secure Computing, Sydney, Australia. DOI:10.1109/DASC.2011.105.
- Opitz, N., Krüp, H., Kolbe, L.M. (2014a). *Environmentally Sustainable Business Process Management - Developing a Green BPM Readiness Model*. Pacific Asia Conference on Information Systems, Chengdu.
- Opitz, N., Krüp, H., Kolbe, L.M. (2014b). *Green Business Process Management -A Definition and Research Framework*. 2014 47th Hawaii International Conference on System Sciences, Waikoloa. DOI: 10.1109/HICSS.2014.473.
- Pautasso, M. (2019). *The Structure and Conduct of a Narrative Literature Review*. [In:] *A Guide to the Scientific Career*. New York: Wiley. DOI:10.1002/9781118907283.ch31.
- Perron, G.M., Côté, R.P., Duffy, J.F. (2006). *Improving environmental awareness training in business*. "Journal of Cleaner Production", 14(6–7). DOI:10.1016/j.jclepro.2005.07.006.
- Pham, N.T., Tučková, Z., Phan, Q.P. (2019). *Greening human resource management and employee commitment towards the environment: An interaction model*. "Journal of Business Economics and Management", 20(3). DOI:10.3846/jbem.2019.9659.
- Piwowar-Sulej, K. (2021a). *The Practice of Green HRM in Poland – with the Focus on Elements of the HR Function*. "Annales Universitatis Mariae Curie-Skłodowska, Sectio H Oeconomia", 55(2).
- Piwowar-Sulej, K. (2021b). *Core functions of Sustainable Human Resource Management. A hybrid literature review with the use of H-Classics methodology*. "Sustainable Development", 29(4). DOI:10.1002/sd.2166.
- Piwowar-Sulej, K. (2022). *Environmental strategies and human resource development consistency: Research in the manufacturing industry*. "Journal of Cleaner Production", 330. DOI:10.1016/j.jclepro.2021.129538.
- Ren, S., Tang, G., Jackson, S.E. (2020). *Effects of Green HRM and CEO ethical leadership on organizations' environmental performance*. "International Journal of Manpower", 42(6). DOI:10.1108/IJM-09-2019-0414.
- Renwick, D.W.S., Redman, T., Maguire, S. (2013). *Green Human Resource Management: A Review and Research Agenda*. "International Journal of Management Reviews", 15(1). DOI:10.1111/j.1468-2370.2011.00328.x.
- Roohy Gohar, S., Indulska, M. (2020). *Environmental Sustainability through Green Business Process Management*. "Australasian Journal of Information Systems", 24. DOI:10.3127/ajis.v24i0.2057.

- Rosemann, M., vom Brocke, J. (2010). *The Six Core Elements of Business Process Management* [In:] *Handbook on Business Process Management 1*, Berlin Springer. DOI:10.1007/978-3-642-00416-2_5.
- Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., Kalof, L. (1999). *A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism*. "Human Ecology Review", 6(2).
- Tang, G., Chen, Y., Jiang, Y., Paillé, P., Jia, J. (2018). *Green human resource management practices: scale development and validity*. "Asia Pacific Journal of Human Resources", 56(1). DOI:10.1111/1744-7941.12147.
- United Nations. (2020). *Sustainability*. Environment Programme [Access: 18.06.2023]. Access on the internet: <https://www.unenvironment.org/about-un-environment/sustainability>.
- vom Brocke, J., Seidel, S., Recker, J. (eds.) (2012). *Green Business Process Management – Towards the Sustainable Enterprise*. Berlin, Springer Sciences & Business Media.
- vom Brocke, J., Sinnl, T. (2011). *Culture in business process management: a literature review*. "Business Process Management Journal", 17(2). DOI:10.1108/14637151111122383.
- von Rosing, G., Coloma, D., von Scheel, H. (2015). *Sustainability Oriented Process Modeling* [In:] *The Complete Business Process Handbook*, New York: Elsevier. DOI:10.1016/B978-0-12-799959-3.00024-0.
- Watson, R.T., Howells, J., Boudreau, M.-C. (2012). *Energy informatics: initial thoughts on data and process management* [In:] vom Brocke, J., Seidel, S., Recker, J., eds., *Green Business Process Management*, Berlin: Springer. DOI:10.1007/978-3-642-27488-6.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.24

Izabela A. KOŁODZIEJ¹

ECOLOGICAL ENTREPRENEURSHIP IN WINE-PRODUCING MICRO-ENTERPRISES IN THE LOWER SILESIA VOIVODESHIP

This article attempts to determine the conditions of ecological entrepreneurship in micro-enterprises producing wine in the Lower Silesian Voivodeship. Currently, the implementation of pro-environmental ideas in local enterprises is of great importance. This is particularly important for micro-entrepreneurs, whose share of GDP in this region is the highest in Poland. The wine industry is deserving of attention because the number of producers has increased greatly in recent years (including in the Lower Silesian Voivodeship). In addition to a literature review, the article will present the results of the author's own doctoral research on determining the conditions and manifestations of local entrepreneurship in the Lower Silesian Voivodeship on the example of wine production.

Keywords: ecological entrepreneurship, micro-entrepreneurship, wine production, Lower Silesian Voivodeship

1. INTRODUCTION

Currently, more and more attention is paid to foods with high sensory and health-promoting values. These are mostly products produced on a small scale by local producers. Producing local food and selling it in the region brings many opportunities and benefits. This production has an additional impact on the competitiveness of the region, e.g. thanks to paying attention to the uniqueness and quality of products and promoting the idea of sustainable development by entrepreneurs (Fitzgerald, 2016).

Among the many products produced locally, the developing wine production in Poland deserves a special mention. It is a product that is increasingly noticed and chosen by consumers. However, sensory, cultural and social values are important when choosing it. The quality of the wine depends mainly on the grape variety used, while the factors determining the qualities of the obtained raw material include, among others, suitable soil and climate. Among these elements, it is the grape variety that primarily determines the identity of the wine. Due to the multitude of factors affecting the quality of wines, they should not be defined as national. High-quality wines should be identified with the region, town or vineyard (Tuszyński, Poreda, 2003).

¹ Izabela A. Kołodziej, Wrocław University of Economics and Business, Poland: e-mail: izabela.kolodziej@ue.wroc.pl. ORCID: 0000-0002-8331-9978.

In Poland, it is best to grow grapes in regions with a warm climate. These include places located in the first climatic zone – the Opolskie, Lubuskie and Lower Silesian Voivodships. The author's interest focused on the area of the Lower Silesian Voivodeship, which is little known for wine production, and is characterized by a warm climate with the highest temperatures in the country throughout the year and soils rich in nutrients. The Lower Silesian Voivodeship is an area with a varied topography and landscape suitable for planting vineyards (Grykień, 2009).

Currently, there are more and more entities wanting to produce wine for sale. In 2011, there were 26 registered vineyards in Poland. In 2022, there were already 380 of them (Krajowy Ośrodek Wsparcia Rolnictwa, 2023).

All the above-mentioned characteristics shaping the running of a vineyard in the Lower Silesian Voivodeship will influence the entrepreneurs' decision to implement eco-entrepreneurship as part of their activities. The conditions of running a vineyard according to the assumptions of the idea of sustainable development have therefore become the subject of research in this work.

2. LITERATURE REVIEW

2.1. Entrepreneurship and ecological entrepreneurship

In order to better look at the issue of ecological entrepreneurship, attention should be paid to how the phenomenon of entrepreneurship is defined. Due to the multidimensionality of this concept, no single coherent definition has been developed. Entrepreneurship can be perceived in different ways – taking into account the context of a person, group or institution. This creates the possibility of interdisciplinary treatment of this term, which has some advantages, but also disadvantages. On the one hand, the lack of terminological consistency may hinder further development of the analyzed phenomenon, and on the other hand, it gives the opportunity to create various concepts. Many possibilities of defining entrepreneurship allow to state that this concept should be systematically systematized and classified (Gąsiorowska-Mącznik, 2017).

In the case of ecological entrepreneurship, it should also be related to the characteristics of the entrepreneur, the actions taken by him and the process itself. In some perspectives, it is also called “green” entrepreneurship (Seroka-Stolka, 2012). Selected characteristics of the described phenomenon of entrepreneurship are presented below (Table 1).

The definitions presented in Table 1 show many similarities. They focus primarily on pro-ecological activities to protect the natural environment. Kochel (2013) also indicates ecological entrepreneurship, which is an entrepreneurial activity taking into account the benefits for the natural environment. The author describes that entrepreneurs often use ecological forms of doing business to promote their own brand. As a result, in the production of food, special attention is paid to the high quality of the harvest, the pro-health qualities of the food produced and pro-environmental behavior in the company. This can be achieved e.g. thanks to the use of natural preparations in plant cultivation (also in the case of vines and grapes) – biostimulators (Filipczak et al., 2016). These are biological substances containing various components necessary for plants, e.g. amino acids, humic substances, extracts from sea algae, chitosan, vitamins, phytohormones and beneficial fungi and bacteria. They are to stimulate the growth and development of roots, leaves or flowers and improve the absorption of essential nutrients. In addition, they increase the tolerance to adverse environmental conditions (Czarnecka, 2017).

Table 1. Selected approaches describing ecological entrepreneurship in organizations

Author, year	Definition of ecological entrepreneurship
Chodyński, 2009	It is an entrepreneurial activity for the benefit of the natural environment. The implementation of ecological activities of commercial organizations should take into account the regulatory influence of the state, the pro-ecological influence of the market and relying on ecological values professed by consumers.
Huczek, 2010	In the literature, the concept of ecological entrepreneurship was formulated as entrepreneurial activity for the benefit of the natural environment. It is indicated that the implementation of the organization's entrepreneurial activities should take into account the regulatory impact of the state, the pro-ecological impact of the market and relying on ecological values professed by consumers.
Seroka-Stolka, 2012	A pro-ecological business model that takes into account the approach related to ecological responsibility can be built using four basic components, which include: strategic choices, value networks, value creation and value acquisition.
Kochel, 2013	Ecological entrepreneurship is an entrepreneurial activity taking into account the benefits for the natural environment. The author points out that entrepreneurs often use eco-friendly business to promote their own brand.

Source: own study based on: (Chodyński, 2009; Huczek, 2010; Seroka-Stolka, 2012; Kochel, 2013).

In addition, more and more attention is paid to the fact that the implementation of entrepreneurial activities should take into account pro-ecological activities in companies. In addition, it is important to implement the ecological values professed by consumers, because they are the ones who choose ecological products or not (Huczek, 2010).

2.2. Ecological entrepreneurship in local wineries

As of 2021, wine trends increasingly focus on the production of “ethically produced wine”. This wine is made in a vineyard that bases its operations on the principles of sustainable development, respecting the rights of employees and the principles of diversity and parity. This is of great importance because the wine industry has a large impact on climate change (Siwiec, 2021). The situation of winemaking in Poland can also be characterized by indicating the stimulators and barriers (conditions) that may occur at each stage of the operation of such a business. The difficulties are mainly related to: the climate in Poland (not every region has the right climatic conditions for viticulture), high financial outlays for running a vineyard and a very long payback time (wine can only be produced a few years after its establishment). However, one should remember about the stimulators of the development of Polish winemaking, which include: very good quality of wine, treating wine as a unique and fashionable product, wine tourism or pro-ecological wine production, which is associated with the production of premium products. These activities have an impact on the vineyard's greater reputation and the image of the region from which the wine comes (Ceo Magazyn Polska, 2022).

Ecological wineries focus on producing wines that will not harm the natural environment. Hence, there are many types of them. These wines can be divided as follows (Kondrat Wina Wybrane, 2023):

- organic wine is a product that has been produced with limited use of artificial, i.e. man-made, through chemical synthesis, means. This means that artificial fertilizers and plant protection products cannot be used in the vineyard. Instead, traditional and modern methods of cultivation are used, such as crop rotation. Thus, organic wine is required to have a relatively low content of, for example, sulphites. In Europe, the law on organic food is the European Commission. All organic wine must be certified,
- biodynamic wine has some of the characteristics of organic wines, but the guidelines for their production are more complicated. The vineyard in this cultivation should be treated as a living organism, which to some extent can be self-sufficient. Natural fertilizers and plant protection products produced on the farm can be used here. In addition, the influence of the phases of the moon on the cultivation of plants is also important here. One of the organizations that certifies biodynamic crops in Poland is Demeter,
- natural wine does not have a single and consistent definition and certification. The production of such wine consists in the least possible interference in the processes of plant growth and wine formation,
- wine with a certificate of limited carbon dioxide emission is a product in which attention is paid to each stage of wine production in order to minimize the emission of the described gas into the atmosphere. Through such measures as, for example, optimization of supplies or the use of appropriate raw materials, the vineyard can receive a certificate of limited CO₂ emissions,
- wine from sustainable production combines all the previously presented definitions and is certified. It also takes into account the many processes involved in winemaking. Not only treatments in the vineyard and wine production, but also related to labelling, packaging and transport.

Apart from that Svobodová et al. (2014) also identified trends in viticulture geared towards environmental actions. They described the use of integrated production (IP) in the vineyard, which is based on strict adherence to the rules set out by the International Organization for Biological Control (IOBC). As part of pro-ecological behavior, the entrepreneur uses the smallest possible doses of plant protection products and prevents soil water erosion by planting plants (other than vines) in every second row. Products from such cultivation are labeled as wines from integrated production. Another type of activities presented by the authors for sustainable development is ecological production, regulated by European law since 2012. Thanks to this, consumers can be sure that the wine they buy is free of all inappropriate substances and that its production does not have a negative impact on the environment (which interesting, until 2012, producers could call wine “organic” even though it came from conventional production).

Campos et al. (2019) also drew attention to the pro-ecological behavior of wine producers. They asked Portuguese entrepreneurs about the possibilities of implementing renewable energy sources in the vineyard and identified the factors that stimulate and hinder the implementation of these practices. One of the most important limitations were financial barriers – manufacturers pointed out the high cost of installing photovoltaic systems, and technological barriers – regarding the storage of batteries for these systems. In the case of environmental factors, the researchers noted the high awareness of the respondents and the willingness to change the existing wine production system to one that would be more energy – efficient and would cause less CO₂ emissions into the atmosphere. Pons et al. (2017) indicated that the macroscopic effects of climate change are modifying

the environmental conditions of viticulture on a local scale in all vineyards around the world. The authors emphasized the importance of appropriate parameters for viticulture. When it is too dry and too warm, the quality of the grapes decreases and, consequently, the quality of the wine also decreases. Blanco-Ward et al. (2019) have a slightly different view on the higher temperature in viticulture. They assessed various climatic indicators, which allowed to conclude that the optimal occurrence of very hot days (above 35°C) and drought has a positive impact on the achievement of high quality wine and its sensory properties. Santos et al. (2012) also indicated that climate variability can have a strong impact on the development of the vine, ultimately affecting the entire wine sector (e.g. socio-economic impacts). Santos et al. (2020) were also of the opinion that climate change is still perceived as a significant risk for viticulture. The adoption of timely, cost-effective and appropriate adaptation strategies can make the wine sector more resilient to a changing climate.

The sustainability of wine is also related to its quality. One of the elements that has an impact on the consumer's assurance about the category of wine is the fact that wine producers receive quality certificates. For Italian wines, Di Vita et al. (2019) identified four categories for classifying wines: PDO², PGI³, basic wine and bulk wine, which in this context is also understood as local wine. The authors noted that the importance of mass-produced wines is growing, which may be particularly related to wine tourism and the desire to buy locally produced wines. In addition, the results obtained may affect the marketing strategies of cooperatives and investment companies existing on the Italian market. Bora et al. (2016) also noted that the quality of wine is very important for both the consumer and the producer and depends, among others, on from eco-climatic conditions. These authors examined several grape varieties from Romania (including Feteasca regala, Feteasca alba and Babeasca gris). Their results showed that in the described climate there are optimal eco-climatic conditions for the proper growth and development of the tested varieties, which directly affects the high quality of the product. On the other hand, Hoang et al. (2016) pointed out that consumers are willing to buy and at the same time can pay more for certified wines imported from other countries, while spending less on domestic wines. This is because the Japanese do not trust their domestic organic systems, hence their increased desire to buy wines from abroad. In turn, Krzywoszyńska (2012) focused on the impact of waste production from the wine industry on the environment in Italy. The author noticed that grape pomace remains after wine production, while one of the wastes at work in the vineyard is vine wood. She also provided several possibilities of using bio-waste generated in the vineyard and winery, e.g. wood as an energy resource in the form of briquettes or bales (both options, however, are difficult to implement and very expensive). In addition, she underlined the importance of changing the current legislation in Italy in the field of bio-waste management.

Additionally, as Plichta et al. (2023) noted, cultural tourism (enotourism) related to wine production may significantly impact entrepreneurs' activities to protect the environment. The vineyards will usually be located in villages or small towns without a direct railway connection. Insufficient communication with vineyards leads to increased road traffic (especially during the season), increased consumption in indicated areas, and the generation of an increasing amount of waste. Therefore, it is essential that for a long time,

² Protected Designations of Origin (PDO) – wine with this designation must be produced traditionally and from start to finish in a given region.

³ Protected Geographical Indication (PGI) – wine with this designation must be produced traditionally or at least partly in a given region.

environmental sustainability is a priority in most strategies for managing tourism products in territories whose attractiveness is a function of ecological balance.

3. RESEARCH METHODS AND ASSUMPTIONS

The analysis of the literature on the subject and industry literature was used in the research. In addition, the survey method and participant observation were used. The research results presented in the publication come from the author's doctoral dissertation. The assumptions for the conducted research were as follows:

- subjective scope: 23 wine producers,
- subject scope: ecological entrepreneurship in wine production,
- time range: the actual study was carried out in the period from October 2019 to December 2020,
- spatial scope: Lower Silesian Voivodeship.

The collected research results were presented in graphic and text form.

The survey consisted of 27 questions and divided into four parts. They concerned:

- characteristics of the enterprise,
- entrepreneurship – its essence and manifestations,
- conditions of entrepreneurship and
- additional questions for the respondent (datasheet).

The research questionnaire mainly consisted of open questions. Closed questions appeared in some parts of the survey related to the characteristics of the company or its details. The survey questions used to write this publication were as follows:

1. What types of entrepreneurship are/are not reflected in your business activity?

The publication author for question 1 prepared a table containing selected types (manifestations) of entrepreneurship and their brief characteristics.

Table 2. Characteristics of selected entrepreneurship types

Selected types of entrepreneurship	Description
Academic entrepreneurship	based on the knowledge of the academic community.
Family entrepreneurship	the owner and employees are a single- or multi-generational family.
Innovative entrepreneurship	is based on the implementation of new and pioneering solutions in enterprises in the form of modern technologies or products.
Imitative entrepreneurship	is based on mapping existing product manufacturing technologies.
Social entrepreneurship	is based on activities aimed at social integration in the aspect of the local community and preventing social exclusion, e.g. through professional activation.
Internet entrepreneurship	economic activity is focused, for example, on selling products or services online.
Ecological entrepreneurship	covers all entrepreneurial activities beneficial to the natural environment, e.g. management of post-production waste.

Table 2 (cont.). Characteristics of selected entrepreneurship types

Selected types of entrepreneurship	Description
Ethical entrepreneurship	ethical values, such as high quality products, are more important than economic values.
Intellectual entrepreneurship	it involves appropriately using existing knowledge to acquire other knowledge. It is characterized by the ability to observe the environment, access and process information, innovation and creativity.
Technological entrepreneurship	focuses on "production technology". It involves producing products in a different way than the competition.
Non-technological entrepreneurship	includes, for example, marketing activities, organization of work in the company and company finances.

Source: own study based on: (Bratnicka, Dyduch, 2014; Charantimath, 2005; Gierańczyk, 2010; Glinka, Gudkova, 2011; Janik, 2004; Klonowska-Matynia, Palinkiewicz, 2013; Kochel, 2013; Lall and Sahai, 2008; Ravichandran, Nakkiran, 2015; Sautet, 2013; Staniec et al., 2018; Wiatrak, 2003; Wielki et al., 2017).

2. What impact did the detailed internal conditions of entrepreneurship have on the development of the business at the stage of establishing the vineyard and now?
3. What impact did specific external conditions of entrepreneurship have on business development at the stage of establishing the vineyard and now?

To clarify questions 2 and 3, the publication author formulated a table with the types of internal and external conditions and assigned examples to them.

Table 3. Selected determinants of entrepreneurship

Conditions of entrepreneurship	
Internal	External
"Hard" elements of an entrepreneur's human potential	Economic (micro- and macroeconomic)
"Soft" elements of an entrepreneur's human potential	Institutional
Continuity of company management	Formal and legal
Tangible and intangible resources of the enterprise	Socio-cultural
Management system and organizational culture	Natural and geographical
	Technological

Source: own study based on: (Błaszczuk, 2013; Czernachowicz, 2011; Koziol, 2009; Mazur-Wierzbicka, 2013; Popega, 2016; Roslan-Karaś and Wasilczuk, 2015; Szczepaniak, 2007).

The survey above questions regarding the conditions shaping ecological entrepreneurship in the production of local wines.

In addition, the research used the participant observation method, which covered the following elements:

- observing – during which notes the researcher takes regarding the place of observation and the objects found there, the behavior of the minded people, events, and interactions taking place,
- conducting conversations with owners – in particular on the detailed conditions of running a business.

Observation of entities participating in the study allowed for the development of research results described in the next chapter of the publication.

4. FINDINGS

Vineyards located in the Lower Silesian Voivodeship are manager mostly in accordance with the policy of sustainable development. Therefore, about 70% of respondents indicated that they represent ecological entrepreneurship (Figure 1) (e.g. Jerzmanice Zdrój Vineyard with ecologically certified vine cultivation or Alvarium Vineyard with nettle “eco-sprays”).

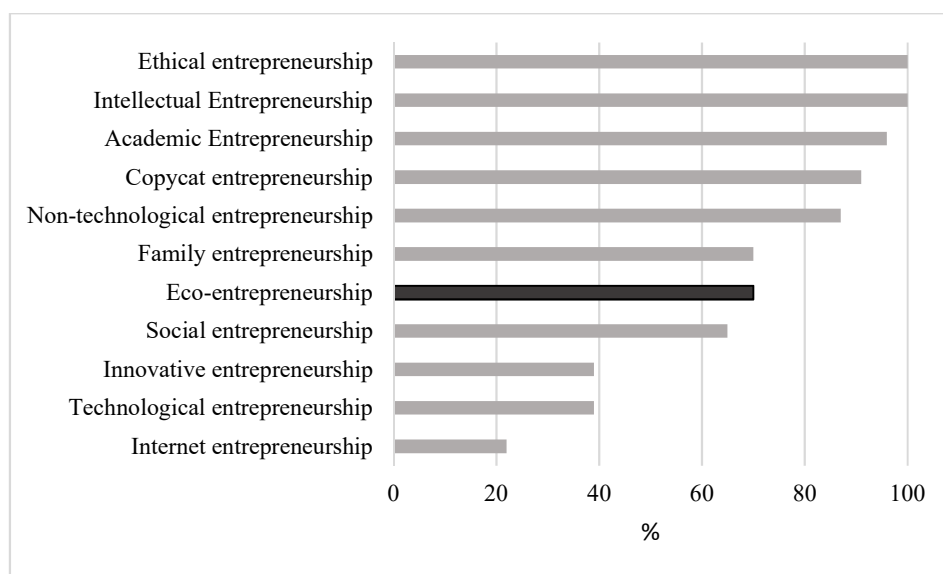


Figure 1. Types of entrepreneurship represented by the surveyed vineyards (in %)

Source: own study.

However, not all entrepreneurs who declared that they pursue the assumptions of ecological entrepreneurship had ecological or biodynamic certificates. They indicated that they did not plant protection products, and the lack of a certificate is mainly due to the complicated procedures for obtaining it and high costs.

Figure 2 presents the respondents' answers, showing the internal conditions shaping entrepreneurial activities.

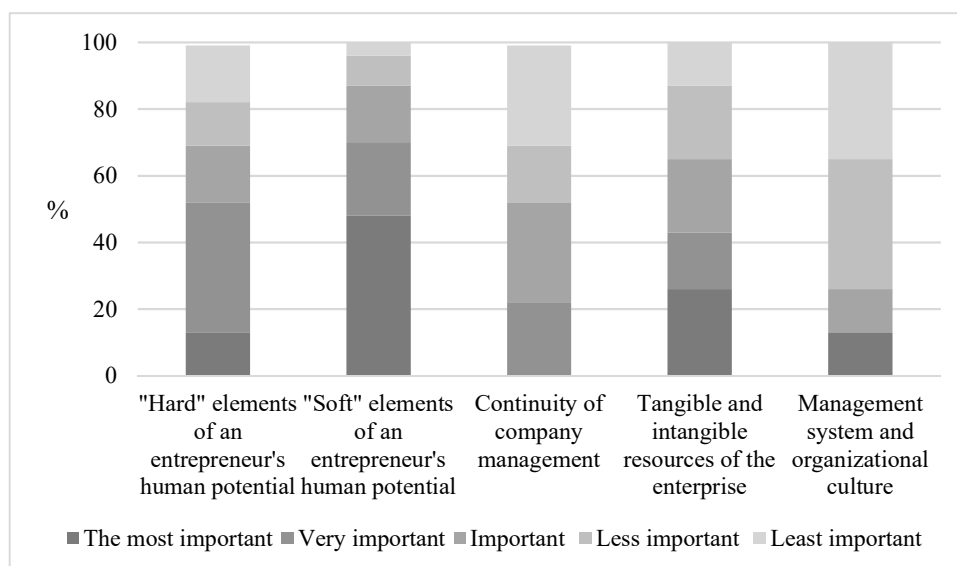


Figure 2. The importance of internal determinants of entrepreneurship in the opinion of respondents

Source: own study.

Entrepreneurs often mentioned “soft” elements of human potential as the most important because they believed that the entrepreneur's character, personality, or attitude determines how their business will develop (they were also stimulators of entrepreneurship). Interestingly, most of the management system and organizational culture and the continuity of the company's management were considered less important or unimportant. These conditions were often indicated as barriers to entrepreneurship.

In the case of the external conditions shown in Figure 3, it can be seen that most respondents indicated natural and geographical factors as the most important (or very important) in running their business, and they also recognized them as stimulators of entrepreneurship. Entrepreneurs recognized the significant (and favorable) impact of climate, soil, and topography in a given place in the Lower Silesian Voivodeship. Establishing a vineyard, running it, and producing wine involves many formalities. In the case of socio-cultural conditions, special attention was paid to local communities' low openness, intense enthusiasm for the business, and low involvement (e.g., in the form of help in the vineyard) – entrepreneurs also considered these conditions barriers.

Interestingly, formal and legal conditions (Figure 3) are less critical for wine producers because they are usually standards or regulations they must comply with. These conditions show wine producers' difficulties formalizing their organic or biodynamic production.

Organic, biodynamic or biological methods of viticulture guarantee the quality of the wines produced. Wines made from organic farming, called organic wines or bio wines. In organic viticulture, organic fertilization is used through the use of composts, natural humic fertilizers, green manure or mineral fertilization limited to rock flour. Ecology in the vineyard is all about respecting nature and the environment and ensuring the right time for the normal growth of healthy grapes, without the use of chemical additives and genetic manipulation.

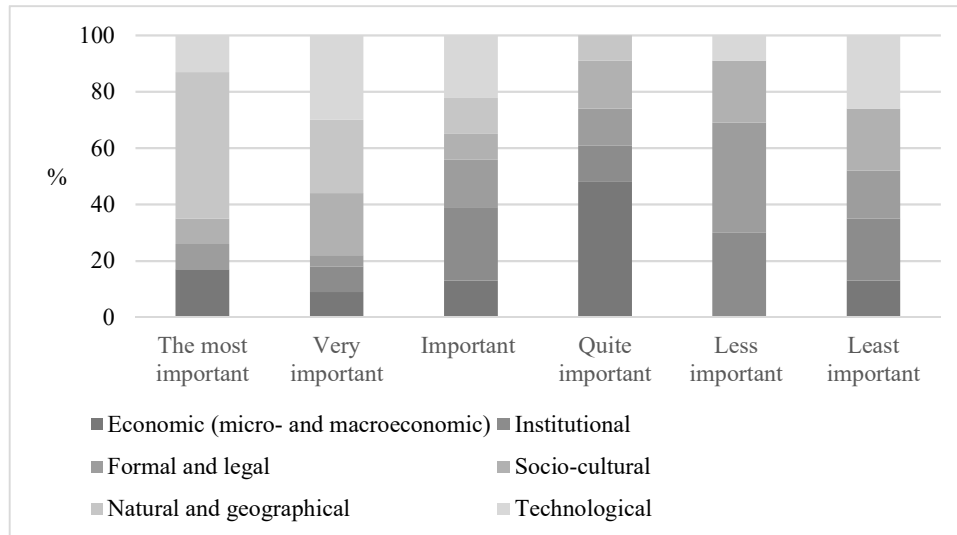


Figure 3. External conditions of entrepreneurship – respondents' answers

Source: own study.

The indicated types of wine illustrate the complexity of the concept of organic production, and thus also organic entrepreneurship. Entrepreneurs do not always understand this type of entrepreneurship properly and often use it without knowing exactly what this type of entrepreneurship means. In connection with the conducted research, it is therefore necessary to rethink the conditions of the described ecological entrepreneurship, using the respondents' answers presented in Figure 4.

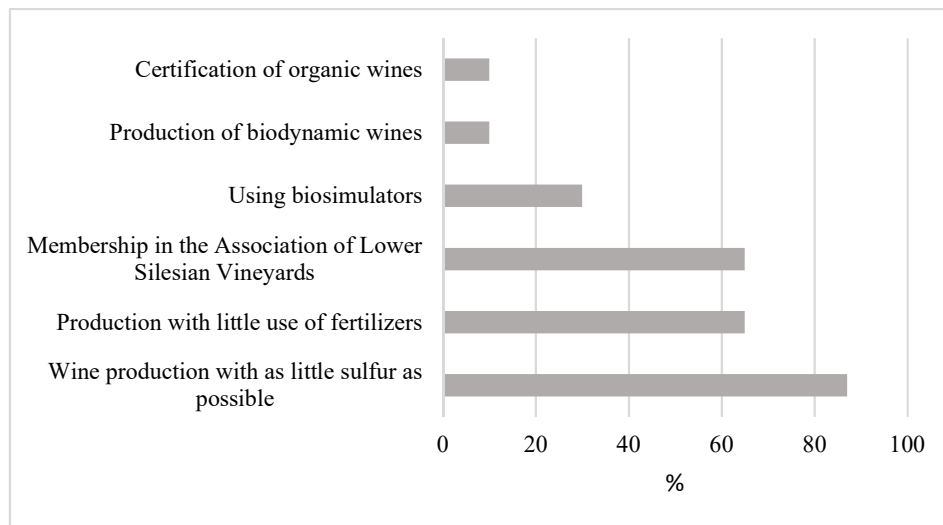


Figure 4. Pro-ecological activities undertaken in vineyards and wineries

Source: own study.

As part of their work in the vineyards, wine producers declared that the most often pro-environmental activities they undertake are the production of wine with the lowest possible amount of sulfur compounds (over 80%) and the production of wine with a small amount of artificial fertilizers (over 60%). Entrepreneurs declared the use of biostimulators in vineyards much less frequently (approx. 30%) and the production of certified wines (approx. 10%). Membership in the Association of Lower Silesian Vineyards was important and quite frequent among the surveyed respondents, which conditioned their possibilities in terms of pro-ecological behavior - in connection with obtaining funds for certification and related to training in the production of wine of the highest quality.

5. DISCUSSION AND CONCLUSIONS

Pro-environmental activities of wine producers are another reserve of entrepreneurship, which is both important for the size of the cultivation and has an impact on the quality of the wine produced. In their own research, winemakers quite often indicated ecological entrepreneurship as the represented type (70%), however, they mostly identified it with the use of a smaller amount of plant protection products and sulfur in wine production. The first issue that should be pointed out here is the use of environmentally safe substances in viticulture - biostimulators. Research conducted at the Research Station of the Department of Horticulture in West Pomeranian University of Technology in Szczecin, on Kamchatka berry bushes of the "Czarna" variety, proved a significant effect of the preparations on the growth of bushes, yield and quality of its fruit (Poterańska et al., 2015). Thanks to the use of biostimulators, it was observed that the bush produced berries with a greater weight. Fruit bushes – such as honeysuckle or vines – are perennial, overwintering plants that tolerate adverse weather conditions very well (Broniecka, Broniecki, 2021). Due to this similarity, the use of the described substances on grapes may have an equally beneficial effect on the quality and size of the harvest as in the case of haskap. An interesting issue in the review of publications on this subject was presented by Campos et al. (2019).

The results obtained as part of research on the internal and external conditions of entrepreneurship suggest that local ecological entrepreneurs producing wine should focus on shaping not only the soft elements of their potential but also those identified as barriers, e.g., over time, it could develop into a responsible system of sustainable management in the company. In research conducted by Žero (2020), respondents indicated that personality determinants are essential in running a business. These studies show that entrepreneurs appreciate the role of soft features of human potential in running their businesses. In the case of the indicated barriers to entrepreneurship, Brignardello (2018) showed that establishing appropriate roles in a family business, producing wine, identifying appropriate tasks for non-family employees, and creating family relationships with them may positively affect the business. Moreover, Marcisz (2017) emphasizes that an appropriately shaped organizational culture is the foundation for the optimal functioning of the organization (also in terms of activities for the natural environment) and its achievement of success, regardless of its size. In the case of external conditions, the most important were, as already indicated, natural and geographical conditions. Rachão et al. (2019) also indicated that the specific features of the region determine the development of the enotourism offer and the formation of territorial identity. These issues, therefore, have a significant impact on the development of the wine industry because, thanks to them, it is possible to attract tourists interested in both enotourism and enogastronomy (wine and gastronomy), as well as taking advantage of other attractions offered by entrepreneurs. In

the case of socio-cultural conditions that respondents considered as barriers, there are many opportunities to increase the local community's interest. The first concerns the entrepreneur's pro-ecological activities that do not change the current landscape of a given area. Winemakers can focus on growing vines without excessive use of plant protection products (Svobodová et al., 2014) and supporting production using biostimulants (Filipczak et al., 2016). Moreover, residents must promote a given place and create its identity (Rachão et al., 2019) because it builds the region's reputation (Menival, Charters, 2014).

In addition Yasir et al. (2023) uses survey responses from 418 students in Lahore and Faisalabad, Pakistan, and developed the study about direct and indirect impact on attitudes towards sustainable entrepreneurship, and perceived behavioral control and environmental value support sustainable entrepreneurial intentions. These findings imply that an individual's perspective on the value of the environment is a significant influence on their attitudes towards pursuing sustainable business practices.

Importantly, providing a control and certification system in the production of local food guarantees the future consumer that the products have been produced in accordance with the applicable regulations on organic farming and are free of contaminants, e.g. plant protection products and hormones (Domagalska and Buczkowska, 2015). In addition, research conducted by the Europejski Program Modernizacji Polskich Firm (2020) shows that micro, small and medium-sized enterprises most often implement activities for Corporate Social Responsibility, aimed at protecting the natural environment, less often at caring for their direct stakeholders, i.e. employees and customers.

Another equally important issue from the point of view of micro-entrepreneurs is ecological production, which requires entrepreneurs to obtain special certificates. The method of obtaining the status of an organic entrepreneur is regulated by the Act of June 25, 2009 on organic farming (Ustawa z dnia 25 czerwca 2009 r.). In the conducted research, only a few vineyards declared that they had certificates of organic production (e.g. Vineyard Jerzmanice-Zdrój). Despite numerous controls, inspections and incurring high costs related to ecological production, respondents from these vineyards see the future of their activities in environmental protection. According to portalspozywczy.pl, it is organic and natural wines (produced locally) that have the greatest potential on the market, because they do not contain artificial substances that improve taste and smell. In addition, natural wines are made from grapes from varieties from local producers. No yeast, sugar or sulphates are added during their production. Natural wine differs visually from standard wines – it is cloudy due to the lack of filtration (portalspozywczy.pl, 2021).

The importance of organic production is confirmed by research by Maciejczak (2019), who asked the respondents whether they would like to buy organic wines and pay more for them at the same time. For the surveyed group of people, the following elements turned out to be important: the ecological method of wine production and the company's activities responding to climate change. Interestingly, respondents are willing to pay more for products with “eco” features than for factors related to other external benefits (e.g. biodiversity, landscape).

Wine producers may try to replace non-organic intermediates with organic ones. One example may be biodegradable heat-shrinkable “caps” for wine or paper labels that can be easily removed from the bottle. Thanks to this, the amount of waste could be reduced to a minimum, and the consumer would be assured that he was buying “ethical wines”, i.e. choosing environmentally friendly products. Another equally interesting idea for less used waste is to use lighter wine bottles. A simpler and so far rarely practiced way to reduce

waste in the form of glass bottles is to use a refundable deposit system for purchased bottles. Pro-environmental activities undertaken by wine producers can also be related to their answers regarding the external conditions of entrepreneurship. With regard to the most important natural and geographical factors, they most often pointed out that without the implementation of sustainable development practices in vineyards, the climate may deteriorate and negatively affect the production. In addition, as the author's own research shows, eco-entrepreneurs are stimulated by two factors: the criteria of social advancement and the size of the demand for a given good. The first issue can be related to activities to promote one's products and the region in order to gain more prestige and respect from local communities. An additional advantage here is greater satisfaction for producers, because – as indicated by Pijet-Migoń and Królikowska (2020) – their production maintains and develops the cultural heritage of a given area. The second issue related to the increase in demand for wines can be stimulated – as noted by Canziani et al. (2018) – through educational activities and increasing consumer awareness. So it is one of the most important issues in the production of wines.

6. RECOMMENDATIONS FOR ENTREPRENEURS

The conducted research was important both for entrepreneurs the local community, and for future scientific activities supporting the implementation of ecological entrepreneurship among local enterprises. Winemakers also showed how crucial ecological entrepreneurship is in the Lower Silesian Voivodeship vineyards and that it is often overlooked compared to other equally essential types, e.g., ethical or intellectual entrepreneurship. The current climate situation forces entrepreneurs to change their activities towards sustainable development.

The essence of entrepreneurial activities of an ecological nature, pointing out that in the Lower Silesian Voivodeship, there are mainly problems related to threats from emissions in cities triggered by industrialization. The use of this additional power is made possible by a security anomaly due to the operation of the air conditioning. It is, therefore, necessary to intensify development activities, especially in a geographical environment that cannot be accessible at the utility level. Because ecological production may impact the environment, local wine entrepreneurs should recommend more often and encourage others to become ecological entrepreneurs. Daniek and Koziolec, 2023 had similar observations.

Community-based cultural tourism (CBT) is an element that shapes the ecological potential of a region. Notice this in their study by Plichta et al. (2023). Tourism of this nature – agritourism combined with enotourism – involves an extended stay among local communities to confront their daily cultural practices and experience the natural environment. This form of tourism reduces the impact of cultural tourists on the natural environment. Local wine entrepreneurs should increasingly promote it – directly in the vineyard or in cooperation with other local food producers – thus creating a network of collaboration beneficial to regional development.

Therefore, the analysis of ecological trends in wine production indicates that producers can focus on areas related to wine production by:

- develop ecological entrepreneurship and combine it with other types of entrepreneurship, e.g., ethical entrepreneurship (interdisciplinarity in entrepreneurial activities),
- production only those drinks that do not harm the environment, such as organic wine,

- pay attention to internal and external conditions shaping ecological entrepreneurship – in particular to barriers that may prevent further development,
- sustainable management of the wine sector in the region, e.g., when organizing wine events or as part of enotourism activities – ecological tourist products,
- willingness to obtain ecological certificates by entrepreneurs and simplifying their receipt on the part of the institution,
- compliance with Polish and European Union law supporting the implementation of sustainable wine production patterns.

Vineyards in the Lower Silesian Voivodship still have to undergo many changes to be able to call themselves “ecological”. Certification of wines as organic products is expensive and difficult – it is worth considering what to do to encourage entrepreneurs to do it and at the same time simplify the entire process of granting such a certificate.

REFERENCES

- Blanco-Ward, D., Monteiro, A., Lopes, M., Borrego, C., Silveira, C., Viceto, C., Rocha, A., Ribeiro, A. Andrade, J., Feliciano, M., Castro, J., Barreales, D., Neto, J., Carlos, C., Peixoto, C., Miranda, A. (2019). *Climate change impact on a wine-producing region using a dynamical downscaling approach: Climate parameters, bioclimatic indices and extreme indices*. “*International Journal of Climatology*”, Vol. 39, issue15. DOI: 10.1002/joc.6185.
- Błaszczuk, D.J. (2012). *Zarządzanie wiedzą w przedsiębiorstwach polskich w świetle teorii i badań empirycznych*. “*Acta Universitatis Lodzianis Folia Oeconomica*”, Vol. 268.
- Bora, F.D., Donici, A., Oslobanu, A., Iu, A.F., Babe, A.C., Bunea, C.I. (2016). *Qualitative assessment of the white wine varieties grown in dealu bujorului vineyard, Romania*. “*Notulae Botanicae Horti Agrobotanici Cluj-Napoca*”, Vol. 44, No. 2. DOI: 10.15835/nbha44210434.
- Bratnicka, K., Dyduch, W. (2014). *Strategiczna przedsiębiorczość: koncepcja i pomiar* [In:] Krupski, R., ed., *Zarządzanie Strategiczne. Rozwój koncepcji i metod*. Wałbrzych: Wydawnictwo Wałbrzyskiej Wyższej Szkoły Zarządzania i Przedsiębiorczości w Wałbrzychu.
- Brignardello, M. (2018). *Changes and continuities in agricultural work: The case of small and medium-sized vineyards in Mendoza, Argentina*. “*Cahiers Agricultures*”, Vol. 27, No., 35007. DOI:10.1051/cagri/2018025.
- Broniecka, G., Broniecki, M. (2021). *Sadzonki krzewów owocowych* [Access: 12.10.2021]. Access on the internet: <https://iglaste.pl/kategoria-produktu/owocowe/>.
- Campos, I., Marín-González, E., Luz, G., Barroso, J., Oliveira, N. (2019). *Renewable energy prosumers in Mediterranean viticulture social-ecological systems*. “*Sustainability*” (Switzerland), Vol. 11, No. 6781, pp. 1-16. DOI: 10.3390/su11236781.
- Canziani, B., Byrd, E.T., Boles, J.S. (2018). *Consumer drivers of muscadine wine purchase decisions*. “*Beverages*”, Vol. 4, No. 98. DOI:10.3390/beverages4040098.
- Ceo Magazyn Polska (2022). *Co zmieni nowa ustawa winiarska?* [Access: 3.02.2022]. Access on the internet: <https://ceo.com.pl/co-zmieni-nowa-ustawa-winiarska-43783>.
- Charantimath, P.M. (2005). *Entrepreneurship Development and Small Business Enterprise*. Belgaum: Pearson Education India.
- Chodyński, A. (2009). *Przedsiębiorczość ekologiczna a rozwój przedsiębiorstwa*. “*Przegląd Organizacji*”, No. 2.
- Czarnecka, A. (2017). *Czym są biostymulatory w uprawach roślin?* [access: 12.12.2020]. Access on the internet: <https://hortinet.pl/czym-sa-biostymulatory/>.

- Czernachowicz, B. (2011). *Selected problems of the development of human capital* [In:] Borowiecki R., Rojek T., ed., *Developmental Challenges of Contemporary Economies. Management Finance – Restructuring*. Kraków: Uniwersytet Ekonomiczny w Krakowie.
- Daniek, K., Koziol A. (2023). *Rozwój zielonej gospodarki w Polsce – ujęcie regionalne*. Kraków: Homini.
- Di Vita, G., Caracciolo, F., Brun, F., D’Amico, M. (2019). *Picking out a wine: Consumer motivation behind different quality wines choice*. “*Wine Economics and Policy*”, Vol. 8, issue 1. DOI:10.1016/j.wep.2019.02.002.
- Domagalska, J., Buczkowska, M. (2015). *Rolnictwo ekologiczne-szanse i perspektywy rozwoju*. “*Problemy Higieny i Epidemiologii*”, Vol. 96 [Access: 15.03.2020]. Access on the internet: www.phie.pl.
- Europejski Program Modernizacji Polskich Firm (2020). *Zielona energia w MŚP pod lupą* [Access: 2.01.2021]. Access on the internet: https://efl.pl/wp-content/uploads/2020/08/Raport_ZielonaEnergiaMSP.pdf.
- Filipczak, J., Żurawicz, E., Sas Paszt, L. (2016). *Wpływ wybranych biostymulatorów na wzrost i plonowanie roślin truskawki “Elkat”*. “*Zeszyty Naukowe Instytutu Ogrodnictwa*”, No. 24.
- Fitzgerald, K. (2016). *Thinking globally, acting locally: locavorism and Humanist Sociology*. “*Humanity & Society*”, Vol. 40, issue 1. DOI:10.1177/0160597615619273.
- Gąsiorowska-Mącznik, E. (2017). *Teoretyczne podstawy przedsiębiorczości*. “*Nierówności Społeczne a Wzrost Gospodarczy*”, No. 52. DOI:10.15584/nsawg.2017.4.28.
- Gierańczyk, W. (2010). *Badania i rozwój jako element przedsiębiorczości w krajach europejskich*. “*Przedsiębiorczość – Edukacja*”, Vol. 6. DOI: 10.24917/20833296.6.3.
- Glinka, B., Gudkova, S. (2011). *Przedsiębiorczość*. Warszawa: Wolters Kluwer Polska Sp. z o.o.
- Grykień, S. (2009). *Gospodarka leśna w powiecie kłodzkim z uwzględnieniem unijnych programów wspierających zalesienia gruntów rolnych*. “*Studia Obszarów Wiejskich*”, Vol. 17.
- Hoang, V., Iida, T., Matsumoto, S., Watanabe, N., Wilson, C. (2016). *Consumer’s comparison between local and imported organic products: a hedonic analysis of the Japanese table wine market*. “*Eurasian Business Review*”, Vol. 6. DOI:10.1007/s40821-016-0047-3.
- Huczek, M. (2010). *Przedsiębiorczość ekologiczna a rozwój lokalny*. “*Przedsiębiorczość – Edukacja*”, Vol. 6.
- Janik, W. (2004). *Rozwój lokalnej przedsiębiorczości w warunkach globalizacji*. “*Roczniki Nauk Społecznych*”, Vol. 32, No. 3.
- Klonowska-Matynia, M., Palinkiewicz, J. (2013), *Przedsiębiorczość w teorii ekonomicznej*. “*Zeszyty Naukowe Wydziału Nauk Ekonomicznych Politechniki Koszalińskiej*”, No. 17.
- Kochel, K. (2013). *Od przedsiębiorczości akademickiej do przedsiębiorczości internetowej* [In:] Flaszewska, S., Lachiewicz, S., Nowicki, M. ed., *Społeczne i organizacyjne czynniki rozwoju przedsiębiorczości*. Łódź: Wydawnictwo Politechniki Łódzkiej.
- Kondrat Wina Wybrane (2023). *Wina ekologiczne* [Access: 1.03.2023]. Access on the internet: <https://www.marekkondrat.pl/oferta-dedykowana/wina-ekologiczne>.
- Koziol, K. (2009). *Book review: Best practices in literacy instruction*. “*Journal of Education*”, Vol. 189, issue 1–2. DOI:10.1177/0022057409189001-214.
- Krajowy Ośrodek Wsparcia Rolnictwa (2022). *Wino* [Access: 28.02.2023]. Access on the internet: <https://www.kowr.gov.pl/interwencja/wino>.

- Krzywoszyńska, A. (2012). "Waste? You mean by-products!" *From bio-waste management to agro-ecology in Italian winemaking and beyond*. "Sociological Review", Vol. 60, issue 2 (suppl.). DOI: 10.1111/1467-954X.12037.
- Lall, M., Sahai, S. (2008). *Entrepreneurship*. New Delhi: Excel Books India.
- Maciejczak, M. (2019). *Korzyści zewnętrzne prowadzenia zrównoważonych winnic w Polsce w warunkach zmian*. "Roczniki Naukowe Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich", Vol. 106, No. 1. DOI:10.22630/RNR.2019.106.1.8.
- Marcisz, J. (2017). *Kultura organizacyjna i jej specyfika* [In:] Gawron, I., Myjak, T., ed., *Kultura organizacyjna przedsiębiorstwa. Wybrane zagadnienia*. Nowy Sącz: Państwowa Wyższa Szkoła Zawodowa w Nowym Sączu.
- Mazur-Wierzbička, E. (2013). *Ekologiczna odpowiedzialność przedsiębiorstw w ramach CSR – korzyści dla przedsiębiorców*. "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu", No. 288.
- Menival, D., Charters, S. (2014). *The impact of geographic reputation on the value created in Champagne*. "Australian Journal of Agricultural and Resource Economics", Vol. 58, issue 2. DOI:10.1111/1467-8489.12033.
- Pijet-Migoń, E., Królikowska, K. (2020). *Rebirth of viticulture and associated changes in the rural areas of lower silesia, SW Poland*. "Geographia Polonica", Vol. 93, issue 3. DOI:10.7163/GPol.0176.
- Plichta, P. (2023). *Pytanie 103: Jakie możliwe są racjonalne sposoby wykorzystywania środowiska w turystyce kulturowej?* "Turystyka Kulturowa", Vol. 2, No. 127.
- Pons, A., Allamy, L., Schüttler, A., Rauhut, D., Thibon, C., Darriet, P. (2017). *What is the expected impact of climate change on wine aroma compounds and their precursors in grape?* "Oeno One", Vol. 51, No. 2. DOI:10.20870/oenone.2016.0.0.1868.
- Popęga, J. (2016). *Przedsiębiorczość. Zagadnienia ogólne* [In:] Lisowska, R., Popęga, J., ed., *Przedsiębiorczość i zarządzanie w małej i średniej firmie. Teoria i praktyka*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.
- portalspozywczy.pl (2021). *Trendy na rynku wina: bezalkoholowe, biodynamiczne i premium* [Access: 14.10.2021]. Access on the internet: <https://www.portalspozywczy.pl/alkohole-uzywki/wiadomosci/trendy-na-rynku-wina-bezalkoholowe-biodynamiczne-i-premium,199463.html>.
- Poterańska, N., Mijowska, K., Ochmian, I. (2015). *Wpływ aplikowanych dolistnie biostymulatorów i środków wapniowych na wzrost krzewów, plonowanie oraz jakość owoców jagody kamczackiej (Lonicera caerulea L.) odmiany Czarna* [In:] Baran, M., Nyckowiak, J., ed., *Badania i rozwój młodych naukowców w Polsce – Nauki przyrodnicze*. Poznań: Młodzi Naukowcy.
- Rachão, S., Breda, Z., Fernandes, C., Joukes, V. (2019). *Enogastronomy in northern Portugal: Destination cooperation and regional identity*. "Advances in Hospitality and Tourism Research", Vol. 7, issue 2. DOI:10.30519/ahtr.573163.
- Ravichandran, K., Nakkiran, S. (2015). *Cooperative Entrepreneurship in Action: A Conceptual Framework*. New Delhi: Studera Press.
- Roslan-Karaś, A., Wasilczuk, J.E. (2015). *Przedsiębiorczość internetowa w blogosferze*. "Ekonomiczne Problemy Usług", No. 116.
- Santos, J.A., Fraga, H., Malheiro, A.C., Moutinho-Pereira, J., Dinis, L.T., Correia, C., Moriondo, M., Leolini, L., Dibari, C., Costafreda-Aumedes, S., Kartschall, T., Menz, Ch., Molitor, D., Junk, J., Beyer, M., Schultz, H.R. (2020). *A review of the potential climate change impacts and adaptation options for European viticulture*. "Applied Sciences" (Switzerland), Vol. 10, issue 9. DOI:10.3390/app10093092.

- Santos, J.A., Malheiro, A.C., Pinto, J.G., Jones, G.V. (2012). *Macroclimate and viticultural zoning in Europe: Observed trends and atmospheric forcing*. "Climate Research", Vol. 51, No. 1. DOI:10.3354/cr01056.
- Sautet, F. (2013). *Local and systemic entrepreneurship: Solving the puzzle of entrepreneurship and economic development*. "Entrepreneurship: Theory and Practice", Vol. 37, issue 2. DOI:10.1111/j.1540-6520.2011.00469.x.
- Seroka-Stolka, O. (2012). *Rozwój przedsiębiorstwa w oparciu o przedsiębiorczość ekologiczną*. "Zeszyty Naukowe Politechniki Częstochowskiej. Zarządzanie", No. 6.
- Siwiec, P. (2021). *Wino – prognoza trendów na 2021 rok* [Access: 15.12.2021]. Access on the internet: 416.<https://ouichef.pl/artykuly/247493,wino-prognoza-trendow-na-2021-rok>.
- Staniec, I., Klimczak, K.M., Machowiak, W., Shachmurove, Y. (2018). *Przedsiębiorczość technologiczna: istota, znaczenie, wybrane kierunki badań*. "Studia i Prace Kolegium Zarządzania i Finansów", No. 168. DOI: 10.33119/SIP.2018.168.6.
- Svobodová, I., Věžník, A., Král, M. (2014). *Viticulture in the Czech Republic: Some spatio-temporal trends*. "Moravian Geographical Reports", Vol. 22, issue 1. DOI:10.2478/mgr-2014-0001.
- Szczepaniak, I. (2007). *Czynniki i uwarunkowania rozwoju małych i średnich przedsiębiorstw w warunkach gospodarki opartej na wiedzy*. "Nierówności Społeczne a Wzrost Gospodarczy", No. 10.
- Tuszyński, T., Poreda, A. (2003). *Narodowe i regionalne napoje alkoholowe*. "Żywność", No. 3(36).
- Ustawa z dnia 25 czerwca 2009 r. o rolnictwie ekologicznym (Journal of Laws 2009, No. 116, item 975).
- Wiatrak, P.A. (2003). *Pojęcie przedsiębiorczości, jej cele i rodzaje* [In:] Jaremczuk, K., ed., *Uwarunkowania rozwoju przedsiębiorczości- szanse i zagrożenia* [Access: 16.06.2020]. Access on the internet: https://www.academia.edu/26570333/Pojęcie_przedsiębiorczości_jej_cele_i_rodzaje?auto=download, pp. 26–27.
- Wielki, J., Sytnik, I., Sytnik, B. (2017). *Biznes internetowy jako czynnik rozwoju przedsiębiorczości regionalnej: współczesne modele i tendencje*. "Barometr Regionalny. Analizy i prognozy", issue 15(4).
- Yasir, N., Babar, M., Mehmood, H.S., Xie, R., Guo, G. (2023). *The Environmental Values Play a Role in the Development of Green Entrepreneurship to Achieve Sustainable Entrepreneurial Intention*. "Sustainability", Vol. 15, issue 8. DOI:10.3390/su15086451.
- Žero, S. (2020), *Osobowościowe uwarunkowania postaw przedsiębiorczych w ujęciu lokalnym na przykładzie gminy Brańsk* [In:] Gruszewska, E., ed., *Współczesne problemy ekonomiczne w badaniach młodych naukowców*. Vol 4, *Teoria i praktyka*. DOI:10.15290/wpewbmn4.2020.03.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.25

Igor KRAVCHUK¹

THE BANKING SYSTEM OF UKRAINE IN WARTIME

This article aims to assess changes in the banking system of Ukraine in 2022 under martial law (at the macro level) and the vulnerability of banks to financial stress (at the micro level). The proposed method uses cluster analysis of the main ratios for banking stability based on the agglomerative hierarchical clustering algorithm.

The analysis of changes at the macro level under martial law shows that anti-stress measures ensured that a significant negative stress reaction was avoided. The analysis of the vulnerability of banks to financial stress shows that a significant number of banks had problems with funding and turned to the Central Bank, but by the end of the year, the funding market had stabilized. The worst situation concerned non-performing loans, but most of those are covered by reserves. Changes in legislation in Ukraine under martial law provided almost 100% coverage of household deposits in banking institutions.

Keywords: bank, liabilities management, martial law, non-performing loans, funding, Deposit Guarantee Fund

1. INTRODUCTION

Military conflicts are one of the most unpredictable factors that can cause severe financial stress and lead to deep systemic instability in the banking sector. Russia's military aggression against Ukraine is the largest geopolitical crisis since the end of World War II and has a significant negative impact on the economy of the country suffering from aggression. Ukraine's GDP decreased by 30,3% in 2022% (IMF, 2023b). Financial stress was also experienced by banking institutions in Ukraine, especially in the first months of the war. The Central Bank of the country – the National Bank of Ukraine (NBU) – did not publish data on the importance of prudential standards both for the banking system of Ukraine and in the context of banks in March-May 2022.

Important research questions are how military action affects the country's banking system, especially in the first months of the war, and how banks adapt to the ability to operate under martial law. This study is valuable as empirical material for central banks to develop effective anti-stress policies for banks' response to military operations, especially given the significant increase in geopolitical risks. In addition, previous military conflicts were less extensive and destructive and mainly concerned countries with a specific Muslim banking model (Afghanistan, Syria) or countries with small economies (Africa).

¹ Igor Kravchuk, Bydgoszcz University of Science and Technology, Poland; e-mail: igor.kravchuk@pbs.edu.pl. ORCID: 0000-0003-2556-8877.

For comparison, in terms of population, Ukraine (at the end of 2021) was the fifth among EU countries (after Germany, France, Spain and Italy). According to the World Bank (2023), in terms of GDP in 2021, the aggressor country (Russia) was in 11th place, and Ukraine was in 53rd place in the world.

The purpose of the article is to assess changes in the banking system of Ukraine in 2022 during martial law (at the macro level), as well as the vulnerability of Ukrainian banks to financial stress (at the micro level).

2. LITERATURE REVIEW

At the international level, the issue of the impact of war on financial stability is primarily published in the reports of international financial organizations. A chapter concerning “The Financial Stability Implications of the War in Ukraine” is published in Global Financial Stability Report (IMF, 2022). The impact of geopolitical risks on macro-financial stability in the global dimension, in particular on Russia’s attack on Ukraine, is analyzed in the Global Financial Stability Report in 2023 and it is noted that „this could pose macro-financial stability risks by increasing banks’ funding costs, reducing their profitability, and lowering their provision of credit to the private sector. These impacts are likely to be disproportionately larger for banks with lower capitalization ratios” (IMF, 2023a).

In the Financial Stability Review of the European Central Bank is noted that „the outbreak of war in Ukraine has compounded existing macro-financial vulnerabilities” (ECB, 2022), but it does not describe the actual and potential impact of the war on the banking system in the EU.

The results of research on the situation in the banking sector of Ukraine during the war are mainly published by researchers from Ukraine in domestic scientific publications. In the database of scientific publications *ScienceDirect* (Elsevier) as of 10.04.2023, when searching for “war in Ukraine”, only 9 publications are available in subject areas such as economics, econometrics and finance, and none of them concerns banking systems, and when searching for “martial law” – 0 in subject areas such as economics, econometrics and finance. The search in the Polish scientific database *BazEkon* for the word “wojna” (in the title of the article) showed 424 results, for the word “martial” – 16, and for the word “war” – 27 334 results and none of them regarding the banking system of Ukraine during the war. In the *Biblioteka nauki* database, when searching for “war” (for 2022–2023), 213 results were obtained (regarding publications in the field of economics, finance and management) and only 3 publications related to the banking system of Ukraine during the war, written by authors from Ukraine.

Lobozynska et al. (2022), Druhov and Druhova (2022), Pshik and Oleynyuk (2022) studied the efficiency of the direct methods of the NBU in regulating the money market.

Arzhevitin et al. (2023) present a generalized description of the main components of the systemic risk of instability of the banking system based on a structural and functional analysis of its elements according to the official reports of the NBU for 2022 and previous years, as well as the prospects for its further development.

Zarutska et al. (2022) compare the key features of the banking system as of January 1 and September 1, 2022, and the corresponding changes in business models using the method of structural and functional groups of banks (SFGB).

The review shows a limited number of scientific publications, in particular in English, on the situation of Ukrainian banks during the war and confirms the need to increase

research on a detailed analysis of the financial situation of banks during martial law in various dimensions (stability, changes in business models, reactions of bank customers, changes in the marketing policy of banks, etc.).

3. METHODOLOGY AND DATA

The study of the Ukrainian banking sector consisted of two stages. At the first stage (the macro level), using a traditional analytical approach, an attempt was made to study the fluctuations in the main balance sheet data of the banking sector, to assess changes in the main indicators of the aggregated balance sheet structure of the banking sector, as well as to check the level of prudential ratios of Ukrainian banks.

At the second stage (the micro level), several indicators were highlighted that helped partially determine (given the existing limitations) the level of vulnerability of banking institutions to shock, that is, “the black swan” that turned out to be Russia’s military aggression in Ukraine.

To identify different groups of Ukrainian banks, taking into account existing approaches (Roengpitya et al., 2017; Farnè, Vouldis, 2017; Hryckiewicz, Kozłowski, 2017; Ayadi, De Groen, 2014), the main indicators are highlighted (low-dimensional context of variables):

- (1) NBU/Lb = Amounts due to the National Bank of Ukraine/Liabilities;
- (2) NPL/L = Non-performing loans/Loans;
- (3) DGF/D = Compensation by Deposit Guarantee Fund/Household deposits.

The correlation of the selected indicators is low ($|\rho| < 0,7$) and the coefficient of variation is $> 10\%$, which allows them to be used for cluster analysis (table 1).

Table 1. Correlation matrix of banking ratios on 01.01.2023

Ratio	DGF/D	NBU/Lb	NPL/L
DGF/D	1,00	0,08	0,18
NBU/Lb	0,08	1,00	0,16
NPL/L	0,18	0,16	1,00
Coefficient of variation, %	17,61	242,09	79,97

Source: Prepared by Author.

The following is a cluster analysis of the data set of these indicators for Ukrainian banks in quarterly periods (01.01.2022, 01.04.2022, 01.07.2022, 01.10.2022, 01.01.2023) to determine the modification of banking groups under the influence of war. Groups are identified using the agglomerative hierarchical clustering algorithm of Ward. The distance is set to “Euclidean”. Calculations are carried out in the R using package NbClust (Charrad et al., 2014). This research used Tau (Rohlf, 1974; Milligan, 1981) index as the criterion for evaluating the optimal number of clusters.

The sample of banks covers all banks in Ukraine. Financial data of banks are obtained from the database of the National Bank of Ukraine.

The limitations of the study can be outlined by quoting the IMF document concerning Ukraine:

While the banking system remains operational and liquid, and rising NPLs are largely provisioned, it is difficult to assess the true impact of the war on the

financial system. [...] One year after the war, the authorities recognize that the emergency measures are causing distortions, obscuring the true health of the banking sector, and inhibiting effective financial system operations and oversight (IMF, 2023b).

4. RESULTS

4.1. Analysis of the banking system of Ukraine

Even before the war began, data on the banking sector of Ukraine indicated its weak role in ensuring economic development and problems with loan servicing by bank customers. Thus, according to the World Bank (2023), the value of the domestic credit to the private sector by banks indicator (% of GDP) in 2020 in Ukraine was 20,9%, in Poland – 49,8%, and in Germany – 84,3%. For comparison, in Syria (the war has been going on since 2011), the value of this indicator in 2020 was 20,7%, and in Afghanistan (the war lasted from 2001 to 2021) – 3% (this should take into account the limited comparison of data with these countries, since the development of credit there is also limited by religious law).

The value of the non-performing loans (NPL) ratio in Ukraine in 2021 was 31,7%, in Poland – 2,9% (The World Bank, 2023), and the value of the NPL ratio based on a balanced sample of 93 significant institutions in the EU – 2,06% (ECB, 2022). For comparison, in Afghanistan at the end of 2018, the value of the NPL ratio was 8,9% (in 2010 – 49,9%), and in Ukraine in 2018 – 54,4% (in 2010 – 15,3%) (The World Bank, 2023).

After the outbreak of the war, on 01.04.2022, most of the key balance sheet components of the Ukrainian banking sector noted negative dynamics (table 2) – the significant drop affected the equity, corporate deposits and term household deposits.

NBU, based on its resolutions, launched the anti-crisis measures to maintain banking sector stability. The most important steps to stabilize the financial sector are as follows (National Bank of Ukraine, 2022):

- (1) cross-border movement of capital is restricted, and the exchange rate is fixed;
- (2) access to refinancing has been expanded (in particular, starting 24 February, one-year unsecured refinancing loans to cover up to 30% of retail deposits were made available to banks);
- (3) the NBU will not apply sanctions against banks for violating prudential standards, open currency position limits, and deadlines for the filing of statistical reports if such violations have been due to Russian aggression;
- (4) banks are forbidden to distribute capital, including by paying dividends;
- (5) a blanket coverage has temporarily been introduced for retail deposits;
- (6) a number of new regulatory requirements have been postponed, some other were suspended;
- (7) loan repayment holidays for borrowers have been regulated (in particular, during martial law and 30 days after it is lifted, credit institutions are prohibited by law from charging penalties and fines or raising interest rates on loans);
- (8) some operational requirements have been simplified. Banks are allowed to use cloud services based in Europe, the United States, and Canada to prevent data destruction. A number of customer identification requirements have been eased. The limit for simplified remote verification procedures has been raised to UAH 400,000 per month from UAH 40,000. Onsite AML/CFT inspections have been suspended until martial law is lifted.

The anti-stress measures taken by the NBU and commercial banks were reflected in the growth of some banking balance sheet data on 01.01.2023, even in comparison with pre-war data (on 01.01.2022). Thus, assets grew by 14,6%, mainly due to a significant increase in investment in securities (23,09%), the value of the corporate loan portfolio remained almost unchanged, and the size of the household loan portfolio decreased by 13,47%. At the end of the year, banks' equity further indicates negative dynamics (-14,47%), but there was an increase in corporate and current household deposits. It was also possible to stop the outflow of term household deposits, the volume of which even slightly increased at the end of the year (by 4,02%).

Table 2. The banking sector of Ukraine in 2022

Key performance indicators of banks	Growth rate on previous period, %				Growth rate (base period is 01.01.2022), %		
	01.04.2022	01.07.2022	01.10.2022	01.01.2023	01.07.2022	01.10.2022	01.01.2023
Assets	-4,05	3,69	6,10	8,58	-0,50	5,57	14,63
Amounts due from the National Bank of Ukraine	39,71	14,05	13,95	29,90	59,34	81,56	135,85
Corporate loans	-0,32	0,08	5,40	-4,20	-0,24	5,15	0,73
Retail loans	3,21	-5,89	-2,04	-9,06	-2,87	-4,86	-13,47
Investments in securities and long-term investments	-10,80	3,73	9,66	21,31	-7,47	1,47	23,09
Equity	-18,55	10,88	-8,32	3,31	-9,69	-17,20	-14,47
Liabilities	-1,98	2,85	7,94	9,15	0,80	8,80	18,76
Amounts due to corporates	-10,72	6,87	9,36	12,41	-4,59	4,34	17,28
Amounts due to individuals (including saving (deposit) certificates)	5,64	2,43	9,49	8,41	8,21	18,47	28,43
Term household deposits	-9,29	-6,80	12,27	9,60	-15,46	-5,09	4,02

Source: Prepared by Author.

Analysis of indicators of the balance sheet structure of the banking system of Ukraine (table 3) allows you to formulate the following conclusions (comparison of data on 01.01.2023 to 01.01.2022):

- (1) the share of loans in assets decreased by almost 8% (the most significant drop was noted in Q4). The structure of the loan portfolio is further dominated by corporate loans (77,34% of the total loan portfolio);
- (2) the role of the investment portfolio in banks' assets has slightly increased (about 3%);
- (3) a negative signal is a decrease in the share of equity in banks' assets (up to 9,29%);

- (4) there is also a decrease in the share of term household deposits in the deposit portfolio of banks by more than 8%.

Table 3. Indicators of the Ukrainian banking sector

Indicator	01.01.2022	01.04.2022	01.07.2022	01.10.2022	01.01.2023
Amounts due from the National Bank of Ukraine / Assets	1,70	2,48	2,73	2,93	3,50
Total loans / Assets	51,89	54,33	51,67	50,49	44,02
Corporate loans / Total loans	74,67	74,08	75,18	76,42	77,34
Retail loans / Loan	22,78	23,39	22,33	21,09	20,26
Investments in securities and long-term investments / Assets	40,42	37,58	37,59	38,85	43,40
Equity / Assets	12,44	10,56	11,29	9,76	9,29
Amounts due to corporates /Liabilities	42,19	38,43	39,93	40,46	41,66
Amounts due to individuals / Liabilities	40,43	43,58	43,40	44,03	43,73
Term household deposits / Total customer deposits	43,20	37,09	33,75	34,61	34,99

Source: Prepared by Author.

When we analyze the banking indicators of financial stability based on prudential standards (table 4), their values do not exceed the limits set by the NBU. However, it should be borne in mind that capital ratios are not yet calculated under the Basel III methodology.

Table 4. Prudential ratios in the Ukrainian banking sector

Ratio	01.01.2022	01.07.2022	01.10.2022	01.01.2023
R2. Regulatory capital adequacy (sufficiency) ratio (no less than 10 %)	18,01	17,16	18,85	19,68
R3. Core capital adequacy ratio (no less than 7%)	11,99	11,40	12,75	13,12
R7. Maximum credit risk exposure per single counterparty / Regulatory capital (no more than 25%)	18,6	17,86	19,61	17,80
R9. Maximum credit exposure to related parties (no more than 25%)	3,71	4,94	4,30	2,81
R12. Total investment in securities (no more than 60%)	0,17	0,26	0,02	0,02

Source: Prepared by Author.

A negative signal about the stability of the banking sector of Ukraine is the fact that on 01.01.2023, one of the largest systemically important banks, which is a state-owned bank, does not comply with the requirements for the values of the R2, R3 and R7 ratios. Two other commercial banks also do not comply with the R7 ratio.

Regarding the liquidity of the banking sector of Ukraine, commercial banks have been required for several years to calculate the LCR and NCFR ratios under international

practice, and the value of these ratios on 01.01.2023 for all banks is not less than the minimum levels set by the NBU.

4.2. Cluster analysis of banks

Before the war, 38% of Ukrainian banks (table 5) could be attributed to a stable group, for which the characteristic feature was both a low level of non-performing loans and a low level of using of NBU funds to maintain stable financing of banking activities. At the same time, almost 50% of funds on household deposits were not covered by the guarantee of Deposit Guarantee Fund (DGF). The maximum amount of compensation for deposits was 200 thousand UAH. A specific feature of the functioning of the deposit guarantee system in Ukraine, in comparison with the EU, is that guarantees apply only to households.

Table 5. Key indicators of banking clusters on 01.01.2022 (% , mean value)

Group of banks	Number of banks	Number of SIB	NPL/L	NBU/Lb	DGF/D
Group 1	27	9	13,16	9,05	53,35
Group 2	5	1	87,59	6,14	57,80
Group 3	9	0	12,53	36,30	64,30
Group 4	3	0	1,92	61,63	25,54
Group 5	10	2	23,38	0,34	83,86
Group 6	17	1	6,49	1,85	27,04

Source: Prepared by Author. SIB – systemically important banks.

During this period, we can distinguish groups of banks for which were already observed high values of ratios indicating a deterioration in their financial soundness. Thus, eight banks (11% of the total number) in groups 3 and 4 had problems concerning financing for banking activities, and for banks in Group 4, the average level of deposit coverage with DGF guarantees was also the lowest.

Banks from Group 2 (five institutions) already had a very high average level of non-performing loans in the pre-war period. It is worth noting that this group included the largest systemically important bank PrivatBank, nationalized in December 2016.

For ten banks in Group 5, the highest level of deposit coverage with DGF guarantees was a characteristic feature. And the banks from Group 6 had the most stable financial situation, but the level of deposit coverage by DGF guarantees was modest.

The low level (for most banks) of deposit coverage by DGF guarantees can be caused both by the presence of deposits for significant amounts (more than 200 thousand UAH) and deposits that fall under the exclusion from the guarantee under Part Four of Article 26 of the law of Ukraine on the deposit guarantee system for individuals, in particular, by the presence of deposits of banking insiders.

Data on 01.04.2022 (table 6) reflect how the first months of the war affected the change in the financial situation of banks. The number of banks decreased from 71 to 69 – licenses were withdrawn from two banks with Russian capital, in which the NPL/L level exceeded 80% at the beginning of 2022.

The share of Group 1 (stable banks) was 44%, but there was also a significant decrease value of DGF/D ratio that may be caused by the withdrawal of small deposits from banks

by households with low incomes as a reaction to the deterioration of the economic situation in Ukraine due to the war.

Table 6. Key indicators of banking clusters on 01.04.2022 (% , mean value)

Group of banks	Number of banks	Number of SIB	NPL/L	NBU/Lb	DGF/D
Group 1	30	10	7,68	6,78	36,58
Group 2	11	2	39,21	8,33	63,06
Group 3	15	0	9,88	36,40	63,51
Group 4	3	0	1,71	66,75	26,30
Group 5	9	2	8,72	1,02	82,40

Source: Prepared by Author. SIB – systemically important banks.

We can also note the negative impact of the war in the increase in the number of banks (from eight to eighteen institutions) that used significant amounts of financial support from the NBU to finance their activities (groups 3 and 4 in Table 6). In addition, the number of institutions with a high average level of non-performing loans has doubled (up to ten banks), and two systemically important banks have already been in this group.

On April 13, 2022, the rules of law were modified to avoid a significant outflow of deposits from the banking system. During the period of martial law in Ukraine and three months from the date of its termination, the DGF pays each depositor of the insolvent bank all amounts of the deposit, including interests, except for the cases provided for in part four of Article 26 of the law of Ukraine on the deposit guarantee system for individuals.

Three months after the termination of martial law in Ukraine, the maximum amount of compensation for deposits will be at least 600 thousand UAH.

Data at the beginning of the second half of 2022 already reflect how the implemented anti-stress measures of state institutions and bank managers affected the financial stability of banks (table 7).

Table 7. Key indicators of banking clusters on 01.07.2022 (% , mean value)

Group of banks	Number of banks	Number of SIB	NPL/L	NBU/Lb	DGF/D
Group 1	32	11	8,36	3,64	99,75
Group 2	15	2	31,87	2,88	99,996
Group 3	3	1	60,21	15,41	99,995
Group 4	1	0	100,00	0,00	100,00
Group 5	7	0	18,53	28,08	99,998
Group 6	7	0	7,47	48,61	99,998
Group 7	2	0	3,01	81,33	100,00
Group 6	2	0	5,13	0,00	0,00

Source: Prepared by Author. SIB – systemically important banks.

Based on cluster analysis using Index Tau, eight groups of banks were identified. Almost half of the banks were in the group of stable financial institutions. Banks with a high level of non-performing loans were divided into three groups, in particular, banks with a very high level of NPL – more than 60%, and one bank (with foreign capital) has an

100% non-performing loan portfolio. Three systemically important banks have already been classified to groups with a high level of non-performing loans.

The number of banks with a high level of financing from NBU funds (groups 5–7) has slightly decreased (to sixteen). There was a group of two banks where funds from the NBU exceeded 80%, as well as a group of seven banks characterized by high values of both the NPL indicator and financing from the central bank.

The last group, which consists of two banks with foreign capital, was the most financially stable. These banks do not use household deposits to finance banking activities.

On 01.10.2022, the number of banks decreased by two institutions (table 8). One of the banks on 01.07.2022 (table 7) belonged to the group with a high NPL (Group 2) and the other – to the group with problems in ensuring stable funding (Group 6).

Table 8. Key indicators of banking clusters on 01.10.2022 (% , mean value)

Group of banks	Number of banks	Number of SIB	NPL/L	NBU/Lb	DGF/D
Group 1	40	12	13,70	2,38	99,56
Group 2	12	2	47,93	1,44	99,996
Group 3	1	0	100,00	0,00	100,00
Group 4	4	0	35,14	35,69	99,997
Group 5	8	0	10,15	32,64	99,998
Group 6	2	0	6,24	0,00	0,00

Source: Prepared by Author. SIB – systemically important banks.

The share of banks with stable financial soundness (Group 1) has increased to almost 60%, which indicates an increasing adaptation of the banking sector to functioning under martial law. The number of banks that had problems with liabilities management decreased, but a group of four banks stands out, for which both indicators (NPL/L and NBU/Lb) exceeded 30%. The average level of NPL for banks with small financing from the NBU (Group 2) decreased to about 48% (60% on 01.07.2022).

At the beginning of 2023, the number of banks with relatively stable financial soundness increased even more – up to 70% of the total number in the banking sector (table 9).

Table 9. Key indicators of banking clusters on 01.01.2023 (% , mean value)

Group of banks	Number of banks	Number of SIB	NPL/L	NBU/Lb	DGF/D
Group 1	47	11	15,40	3,61	99,59
Group 2	11	3	43,97	3,83	99,996
Group 3	5	1	72,72	0,00	99,996
Group 4	2	0	52,41	60,19	99,998
Group 5	2	0	5,54	0,00	0,00

Source: Prepared by Author. SIB – systemically important banks.

A positive signal is also a significant reduction in banks' problems with funding management – only two banks (Group 4) have an NBU/Lb value of about 60%; for other groups – the average value of this indicator does not exceed 3.83%. However, the

involvement of four systemically important banks in groups with high and even very high NPL levels (Group 2 and 3) is an alarming signal.

In general, if we compare the data of the selected indicators with the beginning of 2022 (in the pre-war period), the situation with funding has significantly improved, but we can note a significant increase of non-performing loans.

5. CONCLUSIONS

The analysis of changes at the macro level in the banking system of Ukraine in 2022 during martial law showed that the anti-stress measures taken by the NBU and commercial banks ensured the avoidance of a significant negative stress reaction reflected in the dynamics and structure of the aggregate balance sheet of Ukrainian banks, it was possible to stop the outflow of term households deposits, but equity of banks further decreases. In terms of financial stability, reflected by the values of prudential ratios, the banking system of Ukraine remains relatively stable, but one of the largest systemically important banks has problems with capital adequacy. During 2022, banking licenses were withdrawn only for four banks out of seventy one.

The analysis of the vulnerability of Ukrainian banks to financial stress (at the micro level), reflected by ratios of the non-performing loans, the role of financing from the NBU and the level of deposit coverage by the Deposit Guarantee Fund, showed that during the year a significant number of banks had problems with ensuring stable financing of their activities and turned to the NBU as the lender of the last resort, but the situation is stabilized and at the end of the year only two banks use NBU resources at a significant level.

The worst situation was to the non-performing loans, the median of which was 18,9% at the end of 2022, and for 27% of banks exceeds 35% (including four systemically important banks), but the positive fact is that most non-performing loans are covered by reserves. Changes in legislation in Ukraine provided almost 100% coverage of household deposits in banking institutions during martial law, but the negative feature is the absence of any guarantee umbrella for corporate deposits.

Thus, the situation in the banking system of Ukraine at this difficult time was kept stable, but its further development in the future is characterized by a high level of uncertainty, as Russia's aggression against Ukraine continues.

REFERENCES

- Arzhevitin, S., Bortnikov, G., Bublyk, Y., Lyubich, O. (2023). *Impact of martial state on the performance of the Ukrainian banking sector*. "Financial and Credit Activity: Problems of Theory and Practice", Vol. 1, No. 48. DOI: 10.55643/fcaptop.1.48.2023.3966.
- Ayadi, R., De Groen, W. (2014). *Banking Business Models Monitor 2014 for Europe*. Centre for European Policy Studies, International Observatory on Financial Services Cooperatives.
- Charrad, M., Ghazzali, N., Boiteau, V., Niknafs, A. (2014). *NbClust: An R Package for Determining the Relevant Number of Clusters in a Data Set*. "Journal of Statistical Software", Vol. 61, No. 6. DOI: 10.18637/jss.v061.i06.
- Druhov, O., Druhova, V. (2022). *Banking system in Ukraine 2022: Before and in the Wartime*. "Bezpieczny Bank", No. 1. DOI: 10.26354/bb.2.1.86.2022.
- ECB (2022). *Financial Stability Review*. November.
- Farnè, M., Vouldis, A. (2017). *Business models of the banks in the euro area*. "ECB Working Paper", No. 2070. DOI: 10.2866/386225.

- Hryckiewicz, A., Kozłowski, Ł. (2017). *Banking business models and the nature of financial crisis*. "Journal of International Money and Finance", No. 71. DOI: 10.1016/j.jimonfin.2016.10.008.
- IMF (2022). *Global Financial Stability Report*. October.
- IMF (2023a). *Global Financial Stability Report*. April.
- IMF (2023b). *Ukraine. IMF Country Report*. No. 23/132.
- Lobozynska, S., Skomorovych, I., Vladychyn, U. (2022). *Activities of the National Bank of Ukraine under Martial Law*. "Bezpieczny Bank", No. 1. DOI: 10.26354/bb.3.1.86.2022.
- Milligan, G. (1981). *A Monte Carlo Study of Thirty Internal Criterion Measures for Cluster Analysis*. "Psychometrika", Vol. 46, No. 2. DOI: 10.1007/BF02293899.
- National Bank of Ukraine (2022). *Financial Stability Report*. June.
- Pshik, B., Oleynyuk, R. (2022). *Sytuacja finansowa na Ukrainie i środki zapewniające jej stabilność w czasie wojny*. "Bezpieczny Bank", No. 1. DOI: 10.26354/bb.4.1.86.2022.
- Roengpitya, R., Tarashev, N., Tsatsaronis, K., Villegas, A. (2017). *Bank business models: popularity and performance*. "BIS Working Papers", No. 682. DOI: 10.20955/wp.2017.034.
- Rohlf, F. (1974). *Methods of Comparing Classifications*. "Annual Review of Ecology and Systematics", No. 5. DOI: 10.1146/annurev.es.05.110174.000533.
- The World Bank (2023). *World Bank Open Data* [access: 25.04.2023]. Access on the internet: <https://data.worldbank.org>.
- Zarutska, O., Ponomarova, O., Pavlov, R., Pavlova, T., Levkovich, O. (2022). *Changes in Ukrainian banks 'business models in times of military crisis*. "Financial and Credit Activity: Problems of Theory and Practice", Vol. 6, No. 47. DOI: 10.55643/fcftp.6.47.2022.3923.

Received: March 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.26

Ahmed NAAYIF¹

A CONCEPTUAL MODEL TO ANALYZE THE EFFECTIVENESS OF INTERNATIONAL COOPERATION BETWEEN ORGANIZATIONS IN COMBATING ILLICIT DRUG TRAFFICKING ACROSS BORDERS

Globalization has facilitated cross-border exchanges of goods and services, but it has also led to the growth of transnational criminal networks and illicit activities such as drug trafficking. To counter international crimes, various cooperative efforts have emerged; however, these lack a universal performance measurement framework. This systematic review examines 23 relevant articles out of 57, aiming to propose a model for assessing international cooperation effectiveness in combating illicit drug trafficking. The study identifies six key areas for enhancing cooperation: Effective Strategies, Local and International Collaboration, Communication, Mutual Legal Assistance, Transnational Crime Rate, and Knowledge Sharing. The influence of globalization and global governance on tackling drug trafficking is also highlighted. The developed model serves as a practical and theoretical tool for academics and practitioners involved in evaluating and improving international cooperation.

Keywords: transnational organized crime, illicit drug trafficking, global governance, international cooperation

1. INTRODUCTION

In the last few decades, the number of crimes that occurred cross-borders has increased at an alarming rate. According to a report published in 2010 by the United Nations Office of Drugs and Crime (UNODC), globalization has failed to keep the pace of Economic Globalization after the end of the cold war which resulted to have an open world for trade, finance, travel, and communication. This has developed a way for economic growth meanwhile rising opportunities for criminals (United Nations Office on Drugs and Crime, 2010a). As globalization has created an opportunity for criminals, undoubtedly some people will use the maximum of it. As a result, in the 1970s the phrase “transnational crimes” emerged. Besides, there is no universal framework or model on which all the authors come to an agreement to be used for the performance of international cooperation measurement.

¹ Ahmed Naayif, Business School, Sichuan University, Sichuan, China; e-mail: ahmed.naayif@gmail.com. ORCID: 0000-0003-2825-2261.

There are various methods used to analyze and determine the effectiveness and performance of cooperation whether it is national, bilateral, multilateral, regional, or international although it is not the same framework. These methods assist organizations to comprehend how cooperation has been working in the past and what could be done in order to make the cooperation strengthen in the future. Performance management is an issue of growing significance among public and private organizations since it does not have mutual indicators to measure, how to measure, and how to best use to promote improved performance. However, there is a consensus that everyone believes that measuring performance is a powerful policy and tremendous impact on police work (Tiwana et al., 2015). Therefore, the primary purpose of this study is to establish an enhanced model to measure the performance of international cooperation between organizations while emphasizing the illicit drug trafficking context. Thus, this study can both be used as a base for further research and applied directly in practice by policymakers.

A systematic literature review method has been adopted to find and analyze papers relevant to these areas. This systematic literature review has focused on different areas including Illicit Drug Trafficking; Globalization and Illicit Drug Trafficking; Global Governance; Anti-transnational crimes cooperation; Barriers to Cooperation; understanding the other authors' perception of the Effectiveness of Cooperation.

The author has utilized three open-access bibliographic databases: Research Gate, Science Direct, ProQuest, and other global organizations' annual reports while utilizing the snowball sampling technique to gather relevant articles. No certain time range has been chosen as the specified areas are narrow and the number of publications in these areas is limited. In the initial gathering stage of literature, a total of 57 articles and publications were found. Then, the article abstracts were screened to remove irrelevant papers, so, finally, 23 papers were qualified for this study.

2. ILLICIT DRUG TRAFFICKING

The issue of illicit drug trafficking has been discussed in different agendas, platforms, and conferences by almost all countries and international organizations since it is associated with national security. According to the annual data published by UNODC, over 2612761 kilograms of illicit drugs have been seized within Asia in 2016 alone (United Nations Office on Drugs and Crime, 2018). The data shows Pakistan, Afghanistan, India, and Myanmar were the countries where most of the drugs had been seized in Asia within the aforesaid year. The Annual data of UNDOC is collected in coordination with respective countries' authorities.

Likewise, in recent decades the number of drug abusers in the world has been increasing at an alarming rate and most of the abusers are young people or minors. Due to this, the researchers Somani and Meghani decided to research "the increase of drug abuse among youth and its effect on other people like family and society" (Somani, Meghani, 2016). In this research, they focused on open sources to collect data, such as ScienceDirect, PubMed, CINAHL, and other platforms. The study showed that a total of 211000 youngsters died from using a substance or more. In addition, they found that poverty, age, gender, family structure & relations, and availability & accessibility of drugs as the factors that influence people/minors to abuse drugs. Parallel to this study, there was a press release by UNODC about the number of people using drugs in Afghanistan (United Nations Office on Drugs and Crime, 2010). It highlighted that over one million people (age 16 to 64) abuse narcotics

in Afghanistan. One factor of increasing drug abuse in Afghanistan is the wide availability of opium in the country which is known as a drug-producing country.

3. GLOBALIZATION AND ILLICIT DRUG TRAFFICKING

Globalization in today's era would not be a new phenomenon to anyone. In one way or another, the world has been evolving with globalization and it has helped all people and organizations in different forms. According to what a major expert in the field of global security, Phil Williams, a professor at the University of Pittsburgh, USA, emphasized in his interview, even though globalization has incredible benefits attached to the economic development of countries, one other party who is extremely benefited with the globalization is organized criminals. It is because globalization plays the role of a facilitator for the flow and organized criminal groups initiated cooperate illegal markets, he highlighted during the interview (Council on Foreign Relations, 2012). In his article on E-International Relations, James J.F. Forest agrees with it, indicating that by removing barriers to cross-national movements of goods, globalization opens for organized criminal activities to enlarge their market area of illicit tangible and intangible things (Forest, 2020). Forest also has given some examples of transnational organized crimes with continents and their highly demanding market, such as North America and Europe for drugs, Africa and Middle East for weapons, exotic wildlife, and animal parts for Asia, and at last exploitable humans everywhere in the world.

Another identified research study was devoted to transnational organized crime in India, relevant to the current research as India is a South Asian country. It highlighted that India is amongst the countries where most drugs were seized in 2016. The research was conducted by Nafiu Ahmed, who has published several articles on transnational crimes and his research concentration is terrorism, international crime, and global security. The study was motivated by the rising transnational organized crime rate in India and used the methods of literature and document review. It found globalization, poverty, unequal wealth distribution, technological advancements, inadequate governance, corruption, and geographical location as the promoting factors of transnational organized crime (Ahmed, 2017). Besides, it stressed the effects of the geographical location of India and transnational organized crime since the country has been located between the Golden Crescent and Golden Triangle. Also, it emphasized that globalization has played a significant role in transnational organized crime in India such as the trafficking of people, drugs, smuggling, and money laundering. It points out the significance of cooperation among countries in order to fight against transnational organized crime, giving examples of countries and international organizations which cooperate in order to control or minimize the number of transitional organized crimes in the world.

4. GLOBAL GOVERNANCE

Global governance emerged in the world in 1945 after the end of the Second World War. The main purpose of global governance is to eliminate or reduce the challenges faced by the entire world (Orback, 2019). Those challenges have an impact on different countries in the world instead of on a single country. The primary aim of global governance is to provide global public goods, particularly peace and security, justice, and mediation systems for conflict, functioning markets, and unified standards for trade and industry. The philosopher Benedict has defined global governance as "something that encompasses

activity at the international, transnational, and regional levels. It refers to activities in the public and private sectors that transcend national boundaries” (Benedict, 2015).

The first global institute established in order to govern these global challenges is the United Nations, operating since 1945. Thereafter, other institutions were established at the global, regional, and transnational levels. The European Union in 1993, the Association of Southeast Asian Nations (ASEAN) in 1967, the South Asian Association for Regional Cooperation (SAARC) in 1985, the World Trade Organisation (WTO) in 1995, and many more. These organizations are formed in order to tackle and prevent the challenges faced by human behavior or natural incidents in the world or countries. Amongst these organizations, several organizations are working to control crime at global, regional, and transnational levels.

5. ANTI-TRANSNATIONAL CRIMES COOPERATION

International cooperation occurs when the actors adjust their behavior to the actual or projected preference of others in the process of policy coordination, and the term “policy coordination” is defined as adjusting a country’s policies towards another country or actor (Milner, 1992). In simple words, the countries will have a specific goal(s) or obtain a reward by cooperating.

Many scholars argue and believe that it is substantial to form cooperation in order to fight against transnational crime, i.e. crime connected with more than one country. Professor Phil Williams devoted a chapter of his 2001 book to the transnational criminal network. Since many old-style criminal hierarchies are reforming and enlarging their crime coverage, its purpose was to analyze and unfold the trends of Russian criminal networks (Williams, 2001). The study was focused on analyzing academic pieces of literature on social and business networks to comprehend these networks deeper. In his conclusions, he emphasized that in the era of the 21st century, governments should practice forming effective strategies and should be one of the priorities to attack organized criminal networks, and advocates changes in thinking, attitudes, organizational structure, and the relationship between intelligence & action (Williams, 2001). As well, he ended by enlightening that if the authorities are unable to update and change, the organized crime networks will hold more benefits over the people and authorities trying to work against it.

Zvekic studied the topic of international cooperation and transnational crime in the 1990s. The objectives of the paper were to identify transnational crime trends and international responses through international cooperation. Undoubtedly, even during the 1990s, the authors stressed identifying how international cooperation performs in order to minimize transnational crimes. He argued that transnational crimes will be a huge threat, especially to the security of a state or international security, and, similarly, it will affect political, economic, social, and financial aspects (Zvekic, 1996). It is evident that globalization has been evolving in the world since the end of the cold war. Due to that, organized criminals changed their modus operandi with the adaptation of technologies. Hence, the author underlined the significance of adequate domestic and international responses, cooperation, and coordination. Along with that, he concludes that this is not a matter of criminal law and law enforcement alone, and there should be effective prevention and control international strategies developed to confront the situation. It instructs cooperation to make more effective strategies, the significance of forming cooperation and coordination.

One recent remarkable example which proves the significance of international cooperation would be the operation conducted by the International Criminal Police Organization – INTERPOL in collaboration with different countries in September 2017. The name given for this operation was “Operation Lionfish”. Through the operation, they were able to seize over 360 million United States Dollars (USD) across Asia-Pacific and the Middle East (INTERPOL, 2017). In this operation, a total of 25 countries contributed to made it a successful operation.

Deputy Director of the Chinese Ministry of Public Security’s Narcotics Control Bureau Department of Investigation and Guidance, Li Bo said “The INTERPOL-led operation has served as an important initiative for strengthening multilateral cross-border drug enforcement cooperation, providing effective channels of communication, and enhancing mutual trust among law enforcement personnel. The successful results highlight the determination of all countries that joined to fight against drug-related crimes” (INTERPOL, 2017). Even though cooperation has been a significant strategy in order to fight against transnational crimes, different obstacles are confronted by countries.

6. BARRIERS TO COOPERATION

Cooperation among countries to confront crimes has been an effective strategy. However, since a coin has two sides, there are challenges faced by every cooperation. Some barriers to international cooperation were identified by Oleg Nekrassovski (Nekrassovski, 2013). The barriers he has mentioned are: the anarchic nature of the international system; the egoistic behavior of states; their desire to maximize their relative and absolute gains; instances of the low cost of using force in the international system; the ability of superpowers to veto international agreements; and states’ tendency to compete with one another (Nekrassovski, 2013). Even though these barriers are not aligning with international cooperation in fighting against crimes, this describes the general issues confronted by international cooperation.

The 14th United Nations Congress on Crime Prevention and Criminal Justice held in Japan, March 7 to 12, 2021 discussed international cooperation as vital to address all forms of crime, terrorism, and new and emerging forms of crime. This recent congress has exposed several real-life challenges by the practitioners in the field, such as differences in legislation and criminal justice in states, insufficient knowledge of the applicable treaties, prevailing practices in national, and international extradition and mutual legal assistance, and lack of coordination amongst the countries and organizations (United Nations, 2020). Similarly, it was pointed out that the states and cooperation should be vigilant of the new emerging crimes since those crimes could be attached with a huge risk. On the other hand, they emphasized that a country itself cannot confront transnational crimes such as terrorism. The best option is to cooperate with countries/regional or international organizations in order to fight against them effectively.

Moreover, the Organisation for Economic Co-operation and Development (OECD) held an Anti-Bribery Ministerial Meeting which also emphasized the barriers confronted in international cooperation, such as the lack of communication, poor law enforcement ties amongst countries, insufficient mutual legal assistance (MLA) requests, differences in legal systems, criminal justice &, and varied legal processes. One commonly cited major barrier was the issue of MLA (OECD, 2016). The participants mentioned five systematic barriers to obtaining effective MLA and one important barrier regards information sharing through formal procedures.

Another relevant study, by Gregory Rose, titled “Australian Law to Combat Illegal Logging in Indonesia: A Gossamer Chain for Transnational Enforcement of Environmental Law” strived to identify the challenges in cooperation between Australia and Indonesia to fight against environmental crime (Timber Barons) using the qualitative approach, in particular the case study method (Rose, 2017). It emphasized the challenge of having no treaty on MLA related to environmental crimes in their study as one of the main problems (Rose, 2017). However, a treaty between Australia and Indonesia was signed in 1995 in order to fight against money laundering. Since the countries and cooperation are working to combat or control such crimes, it is essential for countries to strive for effective international cooperation, whether the cooperation is bilateral, multilateral, regional, or world-wide.

7. EFFECTIVENESS OF COOPERATION

Generally, there are different objectives set out by law enforcement agencies, institutes, organizations in order to fight against criminal activities. These objectives could vary from one country to another depending on the circumstances. However, the general objectives which are used by all organizations are to control the crime rate, fear of crime, and victimization in specific places and neighborhoods (WEED & SEED, 2016). The purpose of measuring the performance of an institution is to track how well the institution has been performing with the alignment of its duties. Even though there are limited studies conducted to identify the effectiveness of international cooperation fight against crime, there are numerous studies performed by law enforcement agencies from all over the world on domestic cooperation.

Another study carried out by Anton Maslov investigated current survey methods used to measure police performance in common law jurisdictions on the example of one country, Canada, and international context, to find the crime rate, number of arrests and fines, clearance rate, and response time as the key initial performance measuring factors (Maslov, 2015). These factors were better recognized during the 1990s. Soon after that, the citizens’ perspective towards policing was known as the “professionalization of policing” and the USA started to research more on public opinions when measuring the performance. In the study, the rationale behind these indicators was clearly described with the support of other researchers. For instance, the crime rate has been chosen since it is the best known factor of whether the police are doing well to control crime, although he noted that it alone cannot be taken as the only indicator to determine the performance. Likewise, the arrests and fines indicator also cannot be solely taken as a performance measurement way since some situations like petty theft or abusing a small amount of marijuana could end with a warning to the offender instead of arresting them. However, arresting and fining people are seen as the primary outcomes of police activity and thus indicate its performance to some extent. Additionally, the clearance rate factor is also widely taken among countries in order to recognize the performance as it illustrates the period taken to solve it although the trouble with using the clearance rate as a measurement of performance is that it is prone to definition and measurement errors, making cross-comparisons difficult. The last indicator he describes is the response time taken to attend the scene.

In the similar vein, the book published by the National Institute of Justice, US on police performance and productivity measurement primarily focuses on the effectiveness and productivity of police, describing how these indicators could be measured for different types of crime. The book also has emphasized effectiveness measurement tools, such as

crime rate, crime reporting rate, and clearance rate as major measurement indicators which could be used to analyze the effectiveness (Needle, 1981).

A journal article published by Alpert, Flynn, and Piquero on effective community policing performance measures has defined two types of performance measures: traditional and community policing. In traditional policing, the agencies attempt to measure their productivity by using the number of arrests, citations, contraband seized, number of reporting calls, average response time etc. Contrasting to the traditional method of policing, in community-focused policing, the reporting focuses more on quality rather than productivity, e.g. on the conformation of customer needs such as the factors which affect the daily life of a community. This approach does not fully neglect the indicators used in traditional policing, as it also may take factors like the number of arrests and response time into their consideration (Alpert et al., 2001). The main rationale of that research was to present a model on the performance management of police due to the shift of policing methods from traditional to community-based policing.

Moreover, there have been studies performed to measure the effectiveness of international cooperation in bilateral, multilateral, regional, or world-wide settings. However, most of these studies were focused on international cooperation in a country's development such as economic, poverty, education, etc. An article published by Matthew John Ribeiro Norley was focused on identifying the effectiveness of the United Nations as an effective institution (Norley, 2013). This study was written with evidence from past literature reviews. Also, it has mentioned that since the UN is known as a multi-purpose agency, there were no purpose-specific methods used to analyze its effectiveness, but on the subjective perspectives of realists and liberalists. To conclude the article, the author agreed that the UN is an effective organization working in the international context.

8. CONCEPTUAL FRAMEWORK

The presented review of academic works in the field of transnational crime and international cooperation allowed to identify relevant variables listed in table 1.

Table 1. Result drawn from the literature review

Sources	Research Area	Analysis Result
<ul style="list-style-type: none"> • Phil Williams – <i>Transnational Criminal Networks</i> • INTERPOL – <i>Drugs Worth USD 360 Million Seized in INTERPOL-Led Operation</i> • Zvekic – <i>International Cooperation and Transnational Organized Crime</i> 	Effective Strategies (Internal and External)	Strategies to enhance cooperation with international organizations and intellectual abilities in thinking, attitude, and organization structure; Effective preventative and control strategies
<ul style="list-style-type: none"> • Zvekic – <i>International Cooperation and Transnational Organized Crime.</i> • United Nations – <i>14th United Nations Congress on Crime Prevention and Criminal Justice</i> 	Local and International Cooperation	Building strong cooperation within the country and abroad

Table 1 (cont.). Result drawn from the literature review

Sources	Research Area	Analysis Result
<ul style="list-style-type: none"> • INTERPOL – <i>Drugs Worth USD 360 Million Seized in INTERPOL-Led Operation</i> • Organisation for Economic Co-operation and Development (OECD) – <i>Breaking down Barriers: International Cooperation in Combating Foreign Bribery</i> 	Communication	Building effective communication channels between international, intergovernmental, and local law enforcement agencies
<ul style="list-style-type: none"> • Phil Williams – <i>Transnational Criminal Networks</i> • United Nations – <i>14th United Nations Congress on Crime Prevention and Criminal Justice</i> 	Knowledge sharing	Sharing and educating the people who are working against transnational organized crimes with advanced equipment
<ul style="list-style-type: none"> • United Nations – <i>14th United Nations Congress on Crime Prevention and Criminal Justice</i> • Organisation for Economic Co-operation and Development (OECD) – <i>Breaking down Barriers: International Cooperation in Combating Foreign Bribery</i> • Gregory Rose – <i>Australian Law to Combat Illegal Logging in Indonesia: A Gossamer Chain for Transnational Enforcement of Environmental Law</i> 	Mutual Legal Assistance Agreements	Signing mutual legal assistance agreements between countries and actively adopting to the clauses
<ul style="list-style-type: none"> • Anton Maslov – <i>Measuring the Performance of the Police: The Perspective of the Public</i> • Needle, Jerome, American Justice Institute, National Institute of Justice – <i>Police Performance and Productivity Measurement System</i> • Alpert, Geoffrey P., Daniel Flynn, and Alex R. Piquero – <i>Effective Community Policing Performance Measures</i> 	Transnational Crime Rate	The number of crimes and incidents reported, arrest rates, and contrabands seizures.

Source: Based on author's own findings.

The diagram in Figure 1 presents this author's model of the performance measurement areas of international cooperation in combating illicit drug trafficking across borders. It emphasizes major factors that lead to successful and effective cooperation to combat transnational crimes, such as building effective strategies with countries and international organizations, proper cooperation and coordination, mutual legal assistance from the parties, the crime rate, and at last the latest knowledge on the environment and the ways of operation adopted by criminal networks.

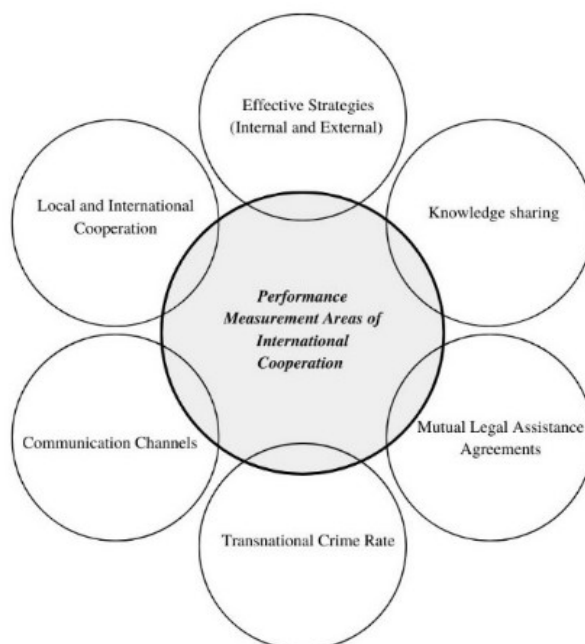


Figure 1. Performance Measurement Areas of International Cooperation

Source: Based on author's own findings.

9. SUMMARY

The number of drug abusers is rising in the world along with the death rate regarding drug abuse. South Asia is one of the most drug-seized regions according to UNODC, in particular the countries of Pakistan, Afghanistan, India, and Myanmar. In the literature, it was evident that if the countries cultivate drugs that are available easily, there is a high chance of having more drug abusers. Moreover, globalization also opened several doors for transnational organized criminals to enlarge their area of operation because of borderless transactions among nations. Organized criminals are known as one of the primary beneficiaries of globalization. This could be connected to Asia as well since there is a study conducted on transnational crimes in India that highlight that globalization and other factors are known as the promoting factors of transnational organized crimes.

Additionally, what the authors Zvekic and Williams found in their studies strongly advise building strong bilateral, multilateral, regional, and world-wide international cooperation in order to confront transnational crime. However, the authors of prior work have also identified different challenges of having international cooperation while working against transnational organized crime. Some general challenges faced by international cooperation are issues of the anarchic world, egoistic behavior of states, their desire to maximize their relative and absolute gains, instances of the low cost of using force in the international system, the ability of superpowers to veto international agreements, and the states' tendency to compete with one another. The main challenges faced by international cooperation working against crimes are differences in legislation and criminal justice in states, insufficient knowledge of the applicable treaties, prevailing practices in national,

and international extradition and mutual legal assistance, and lack of coordination amongst the countries and organizations.

It is certain that there is no universal model or framework in order to measure the effectiveness of an organization or cooperation. One way to measure performance and effectiveness is to compare the objectives of organizations and their work. This method is generally adopted in the business environment to analyze the company's and employees' performance. There are some key indicators used to measure the performance of law enforcement agencies. However, it has been noticed that there is a change in the performance measurement indicators between traditional to community-based policing. Some of the measurement indicators are the same but additionally community-focused policing focuses more on finding out the public's opinion, unlike traditional policing. In traditional policing the indicators used to measure performance are crime rates, the number of arrests/fines, clearance rate, and response time.

After a thorough literature review, a conceptual framework has been proposed based on reoccurring and significant variables which can be used as indicators to analyze the effectiveness of international organizations. It is worth mentioning that, there is a lack of research or studies conducted in the area of evaluating the effectiveness of international cooperation working to prevent and control crime although there are academic papers published on other aspects of international cooperation. This shows an obvious direction of future work. Besides, it would be interesting to understand in depth each area mentioned in the model, specifically to what extent each area contributes to evaluating the effectiveness of cooperation.

REFERENCES

- Ahmed, N. (2017). *Transnational Organized Crime in India: A new framework of analysis*. "European Journal of Social Sciences Studies", 2(5). ZENODO. DOI: 10.5281/zenodo.815514.
- Alpert, G.P., Flynn, D., Piquero, A.R. (2001). *Effective Community Policing Performance Measures*. "Justice Research and Policy", 3(2). DOI: 10.3818/jrp.3.2.2001.79.
- Benedict, K. (2015). *Global Governance*. "International Encyclopedia of the Social & Behavioral Sciences". DOI: 10.1016/b978-0-08-097086-8.75018-5.
- Council on Foreign Relations (2012, May 30). *How Globalization Affects Transnational Crime*. Council on Foreign Relations. Access on the internet: <https://www.cfr.org/video/how-globalization-affects-transnational-crime>.
- Forest, J.J.F. (2020). *Globalization and Transnational Crime Globalization and Transnational Crime*. Access on the internet: <https://www.e-ir.info/pdf/87686>.
- INTERPOL (2017). *Drugs worth USD 360 million seized in INTERPOL-led operation*. www.interpol.int. Access on the internet: <https://www.interpol.int/en/News-and-Events/News/2017/Drugs-worth-USD-360-million-seized-in-INTERPOL-led-operation>.
- Maslov, A. (2015). *Measuring the Performance of the Police: The Perspective of the Public*. PublicSafety.gc.ca. Access on the internet: <https://www.publicsafety.gc.ca/cnt/rsracs/pblctns/2015-r034/index-en.aspx>.
- Milner, H. (1992). *International Theories of Cooperation Among Nations: Strengths and Weaknesses*. "World Politics", 44(3). DOI: 10.2307/2010546.
- Needle, J. (1981). *Police Performance and Productivity Measurement System*. National Institute of Justice. Access on the internet: <https://www.ojp.gov/pdffiles1/Digitization/81054NCJRS.pdf>.

- Nekrassovski, O. (2013, November). *Barriers to International Cooperation*. Access on the internet: https://www.researchgate.net/publication/309351763_Barriers_to_International_Cooperation.
- Norley, M.J.R. (2013, February 23). *Is the United Nations an Effective Institution?* E-International Relations. Access on the internet: <https://www.e-ir.info/2013/02/23/is-the-united-nations-an-effective-institution/>.
- OECD (2016). *Breaking down Barriers: International Cooperation in Combating Foreign Bribery*. Access on the internet: <https://www.oecd.org/daf/anti-bribery/Anti-Bribery-Ministerial-International-Cooperation-Discussion-Paper.pdf>.
- Orback, J. (2019). *What is Global Governance? – The Global Challenges Foundation*. The Global Challenges Foundation. Access on the internet: <https://globalchallenges.org/global-governance/>.
- Rose, G. (2017). *Australian Law to Combat Illegal Logging in Indonesia: A Gossamer Chain for Transnational Enforcement of Environmental Law*. “Review of European, Comparative & International Environmental Law”, 26(2). DOI: 10.1111/reel.12206.
- Somani, S., Meghani, S. (2016). *Substance Abuse among Youth: A Harsh Reality*. “Emergency Medicine: Open Access”, 6(4). DOI: 10.4172/2165-7548.1000330.
- Tiwana, N., Bass, G., Farrell, G. (2015). *Police performance measurement: an annotated bibliography*. “Crime Science”, 4(1). DOI: 10.1186/s40163-014-0011-4.
- United Nations (2020). *14th United Nations Congress on Crime Prevention and Criminal Justice*. Japan: Kyoto Conference 2020.
- United Nations Office on Drugs and Crime (2018). *Annual Drug Seizures, dataUNODC*. [Dataunodc.unodc.org](https://dataunodc.unodc.org). Retrieved June 15, 2021. Access on the internet: <https://dataunodc.unodc.org/drugs/seizures>.
- United Nations Office on Drugs and Crime (2010a). *The Globalization of Crime a Transnational Organized Crime Threat Assessment*. Access on the internet: https://www.unodc.org/documents/data-and-analysis/tocta/TOCTA_Report_2010_low_res.pdf.
- United Nations Office on Drugs and Crime (2010). *UNODC Reports Major and Growing Drug Abuse in Afghanistan*. United Nations: Office on Drugs and Crime. Retrieved June 15, 2021. Access on the internet: <https://www.unodc.org/unodc/en/press/releases/2010/June/unodc-reports-major-and-growing-drug-abuse-in-afghanistan.html>.
- WEED & SEED (2016). *Law Enforcement Goals and Objectives*. Access on the internet: <https://www.manchesternh.gov/health/2011WNSLawEnforcementGoals&Objectives.pdf>.
- Williams, P. (2001). *Transnational Criminal Networks 1*. Access on the internet: <https://ir101.co.uk/wp-content/uploads/2018/05/williams-transnational-criminal-networks-ch-3-in-networks-and-netwars-the-future-of-terror-crime.pdf>.
- Zvekcic, U. (1996). *International Cooperation and Transnational Organized Crime*. “Proceedings of the ASIL Annual Meeting”, 90. DOI: 10.1017/s0272503700087061.

Received: February 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.27

Jagoda OCHOCKA¹

WHAT IS THE MEANING OF THE EXPERIENCE FOR VALUE? – EXPERIENCE CO-CREATION AS ITS DETERMINANT

At the end of the 20th century, the idea of experience management became inextricably associated with value as a core element of marketing. Moreover, the activity of a few evolved into the collaboration of many. Since value is co-constructed by different actors, one cannot neglect their subjective experiences. Therefore, this article aims to show the importance of the co-creation of experiences in the context of value, while providing insight into experiential marketing, focusing on its connection with value. The paper is organized as follows: first, it presents a brief explanation of the concepts of experience as such and value co-creation; this is followed by a brief historical outline of the evolution of the service into the experience. Then, it lists six arguments for experiential marketing as a determinant of value, selected based on a literature review and examined for their significance. Finally, it presents some important implications for management.

Keywords: customer experience, co-creation, customer engagement

1. INTRODUCTION

Although experiential marketing may seem very modern, the concept of experience in management is by no means red-hot. The first discussions of the term emerged in the 1950s and led to increased interest in its associations with marketing in the 1980s (Baran, 2019). Initially, “experience” was more prevalent in disciplines such as philosophy or psychology (Zhang et al., 2010). It emerged in the management and marketing literature only after researchers incorporated the irrational, emotional view of the customer into the discourse. All in all, analysis in business slowly began to gain momentum at the turn of the century with the announcement of the experience economy by Pine and Gilmore in 1999 (Stasiak, 2014). According to this theory, the experience is what consumers desire and seek in shopping and consumption. Therefore, it is no longer the product or service that companies bring to market that is the core element of the offering. Undoubtedly, they are still part of the offer, but it should be more than just a functional, helpful item or service of high quality to meet the needs and desires of the customer. Nowadays, the experience is the most developed value proposition that can be created (Roederer, 2012), because it has a unique character. Therefore, studies in the area of experience should scrutinize the factors which

¹ Jagoda Ochocka, Doctoral School of Social Sciences, University of Lodz, Poland; e-mail: jagoda.ochocka@edu.uni.lodz.pl. ORCID: 0000-0001-5125-5773.

influence its co-creation, this remaining the purpose of this article. Although these factors may be countless, both detailed and overall view on the subject would enrich the scientific knowledge (this article shows the case from macroperspective). Besides, the conclusions may also aid managers in developing the valuable experience co-creation know-how.

2. CO-CREATING EXPERIENCES

At this point, these three marketing concepts need to be explained: Experience, Value Proposition, and Value Itself. Only by knowing the essence of all the listed concepts is it possible for a researcher to understand the relationship between them and question it for the benefit of theoretical and business development. Disturbingly, all the terms have been discussed extensively in the literature, but with different results, which inevitably lead to problems in interpretation (e.g., Leclerq, Hammadi, Poncin, 2016; Haase, Becker, Pick, 2018; Groenroos, Voima, 2011). That is the reason for theoretical misunderstandings and difficulties in formulating recommendations for practitioners. One of the reasons for such misunderstandings is that while the concept of value proposition is more of a management term, both value itself and experience can be found in different disciplines with different meanings (Pitelis, 2009; Forlizzi, Ford, 2000). Therefore, it is crucial to highlight the main ways to define and clarify all three concepts, mainly based on marketing and management.

2.1. Experience

Usually, experience is associated with knowledge based on past actions and facts. In marketing, however, the definition remains controversial as researchers put forward numerous theses based on different perspectives (Lemon, Verhoef, 2016). First of all, it is viewed either a theatrical performance or a result of multiple interactions between market actors that vary in character. In the first case, the customer is immersed or absorbed in a show prepared with the utmost care by the manufacturer or service provider. In the second case, it is the impact of an emerging acquaintance between the actors involved in the collaboration which determines the potential for satisfaction and even loyalty (in the long run). Second, experience is defined either a reaction of an individual customer to the collection of stimuli and impressions or a set of feelings that lead to an attitude of the customer that develops over time (Brandys, 2016).

For this article, the following definition applies: an experience is the result of all interactions between the consumer and the provider (Shaw, 2005), as well as all other actors that may contribute to the creation of the experience. The main doubt is whether the experience should be explained as knowledge or the result of the interactions. To a nonexpert, there may not be the slightest difference between these two views. However, although subsequent touch points build knowledge and, therefore, these two meanings have much in common, they must be distinguished, with the latter revealing the true nature of an experience. For marketers, it results from multiple and repeated encounters between the consumer and the company, both online and offline, direct and indirect (du Plessis, de Vries, 2016). Thus, it is not just a matter of strict knowledge of logical facts, nor of purely emotional absorption of the stimuli received. Moreover, an experience is not an immediate effect, even though the emotions of shock and amusement are inherent in it and play an essential role in its creation. Instead, it is created with the contact that the customer has with the offer. Therefore, the experience is closely related to consumer expectations and satisfaction (Skowronek, 2012).

2.2. Value proposition

If an experience is a kind of market offering, like a product or service, it has a peculiar value proposition through which organizations do their utmost to meet their customers' expectations and gain their satisfaction (Boguszewicz-Kreft, 2010). The concept of value proposition also dates back to the 1980s (Kowalkowski et al., 2012) and it refers to the knowledge, skills, and abilities of value creators that they use to benefit consumers (Siddike, Kohda, 2018). Within the value proposition, all of their efforts are aimed at creating value for beneficiaries. Just as value is commonly presented as a relatively straightforward relationship between benefits and costs (Mahajan, 2017), this construct is far more complex. The way it is to be understood depends on a variety of factors, such as the object, the perspective, or the nature of value (Addis, Holbrook, 2001). Thus, value seems to be of utmost importance because different types of value contain heterogeneous characteristics and meet specific customer expectations.

2.3. Value itself

In marketing, six types of value are usually distinguished: in exchange, in use, in context, hedonistic, in experience, and transformative, which are listed in this order because each of them represents all the previous factors and one additional factor. It happens that use value and exchange value are used interchangeably, and their presence in economics and business began after Smith's treatises in which he discussed the utility of an object in terms of the value of money for which it can be exchanged in the market (Eggert et al., 2018). Therefore, both use and exchange value are closely related to market exchange. That means that use value is the least extensive value, which represents the degree of usability of the value proposition that is valued by the individual user (Ballantyne, Varey, 2006). Context value also refers to functionality but views it through the prism of the user's context. Thus, individuals may calculate value differently depending on the situation or environment (Edvardsson, Tronvoll, Gruber, 2010; Vargo, 2008). Since many market participants can offer products and services with the same quality and functionality, they must have increased their overall value to the customer through hedonic aspects. From this point on, the value proposition must be used with pleasure to meet the customer's expectations (Kuikka, Laukkanen, 2012). As satisfaction increases, the use of the value proposition gradually becomes an experience with a special "wow" effect for the customer. Therefore, the value could be defined as an experiential value (Voima, Heinonen, Strandvik, 2010). Although this type of value could be considered the most comprehensive for experiential marketing, researchers have recently considered it insufficient and point to another customer need sought in the value proposition: the possibility of transformation. Experiences, then, should not be only entertaining, but should also enable the desired change in the consumer's mindset or, in the long run, attitude or behaviour. This type of value is then referred to as transformative value and is one of the areas to be explored (Blocker, Barrios, 2015; Zeithaml et al., 2020).

Moreover, to find out the essence of value, one must recognize its source and its bearer. Since the product or service is the essence of the value proposition, the carrier of the value should be found in the value proposition itself and the consumption process is the source of the value. According to the latest insights of experiential marketing, the carrier is the offering (even if the offering changes from a product or service to an experience). Still, the source extends from the consumption to the creation process, so in the prism of the experience economy, value is created in the process of creating experiences as well as in the actual consumption. Thus, an experience is the carrier of value, and the process of

developing experiences remains its source. However, as marketing tends to collaborate with various market participants (customers, competitors, and others), the discussion of experience creation should shift from the perspective of “doing for” to “doing with” (Groenroos, Voima, 2011). One of the reasons for this lies in the definition. If the experience is understood as the result of multiple interactions between actors, it can no longer be a show that is conscientiously prepared for the customer by a provider. “Participating” means that all subjects interested in value are no longer passively waiting for a perfect offer prepared by organizations (Moeller et al., 2013), but change their role in two ways. First, they move from mere beneficiaries to partners in the process as they benefit from their engagement and gain (at least partial) control, participate in decision-making, or help shape the process as a whole (Lusch, Vargo, O'Brien, 2007). Second, these market participants become active, i.e., they not only participate in the co-creation process, but they do so voluntarily, with or without individual invitation, using their resources and sacrificing their time.

In summary, participating in the co-creation process undoubtedly becomes an experience for the participants (Elleway, Dean, 2016). More so, it becomes an experience in both ways: they participate in numerous interactions, but they also gain specific knowledge. Since many participants are involved in the process, many types of value may need to be created, while the expectations of each stakeholder may be very different. For this reason, it is necessary to plan the process of co-creating experiences carefully. Therefore, organizations should painstakingly and thoughtfully create an appropriate ecosystem for experiences, i.e., the process, the conditions for collaboration, the space for co-working, etc. The goal of this experience ecosystem is undoubtedly to facilitate all participants' co-construction of their own personalized and contextualized experiences (Kallmuenzer et al., 2019).

3. METHODS

The key expected implication of the process of co-creating experiences is the value (of all kinds) that leads to the satisfaction of all parties and the desired behavior of the customer. As for the details, managers should focus on several aspects that, if properly managed, increase the likelihood of achieving the expected results. The number of factors that determine the process of co-creating experiences is enormous. These include elements that the organization can shape or control and those that it cannot (Laming, Mason, 2014; Verhoef et al., 2009; Teixeira et al., 2012). Although most factors are beyond the organization's control, it is still imperative to properly design all the stimuli that determine them, such as the atmosphere of the sales floor, the functionality and clarity of the website, the space for comments and discussions in social media, etc. Among them are factors that can be controlled (in whole or partly) and not controlled by the organization.

The choice of the factors above was motivated by literature studies that address past research, critical value-related questions, and predictions about future trends in experiential marketing. Three main criteria has been accepted: the significance of a factor, the ability to analyze it from a macro-perspective and its direct impact on the final value for the experience beneficiaries. Thus, the author analyzed several theoretical models of experience co-creation which concentrate on different aspects of this process, such as interaction among parties, dependencies between the elements of the process, its periodicity or even the determinants of the process of co-destruction. Also, the author eliminated the elements which are too detailed to impact the process directly. Finally, a list

of value associated components has been created (based on: Kleber, Volkowa, 2017; Vargo, Akaka, Vaughan, 2017, Leclercq, Hammedi, Poncin, 2016, Minkiewicz, Evans, Bridson, 2014, Pitelis, 2009) and confronted with the determinants of experience co-creation.

4. RESULTS

In this article, the author highlights six factors to give a clear and relatively holistic view of the case discussed, including Community, Space, Process, Interactions, Satisfaction, and Transformation. These affect a variety of aspects in the experience co-creation process. For example, the conditions (both physical and emotional) of the actions undertaken while co-creating strongly determine the effect of the process. Then, the sympathies and antipathies among all actors in the process, based on their knowledge, opinions, personal values etc. determine the value creation or destruction. Finally, the results of the experience co-creation process leave the actors with specific feelings and resolutions, conditioning further customer behavior. Thus, it is of a great significance to take all of the above into even consideration.

Community

The observation that business processes do not take place in an isolated world is neither new nor surprising. The macro-environment affects every organization, and all attempts to fight it are doomed to failure. However, the elements of the environment (both micro and macro) should not be defined a priori as destructive. Occasionally, if interpreted correctly, they can contribute to the company's success. Therefore, it is urgent for companies to constantly learn to take advantage of the turbulent changes in the market environment, despite or thanks to them (Okreglicka et al., 2016).

One of the elements of the macro environment is socio-cultural aspects such as traditions, lifestyles or value systems. These are factors that facilitate people to live and communicate in groups. That happens thanks to practices, i.e. behavioral patterns that each member of a community is aware of and benefits from to navigate their environment (Elleway, Dean, 2016). These factors also shape the professional realm by providing rules and boundaries within cultures (Ciekanski et al., 2018). It is, therefore, essential for multicultural co-creator groups to know their limits and preferences and to benefit from this knowledge, both in creating the value proposition itself (the impact of the process) and in the activities undertaken to create it (the process as such). If the final value does not meet expectations due to the disturbance of socio-cultural factors, the experience may be ruined and challenging to improve. In that case, beneficiaries may be unwilling to engage in the process again. Such an effect is possible if the cultural factors are so apparent to beneficiaries that they do not realize their importance until they are immersed in them. Therefore, organizations must create awareness of cultural differences among their employees to avoid discrepancies. On the other hand, if managers take these factors into account, participants may be even more positively surprised by the result and find it much more valuable because it aligns with their cultural norms and beliefs. And if individuals are not convinced of the ultimate value but recognize the approval of their society, they may judge it more enthusiastically. It is important to remember, however, that sometimes the desired experience is one of breaking the rules. That can happen in socio-cultural changes, such as fighting for the rights of transsexual people or breaking the taboo of period poverty in the world. This kind of revolution is a risky, albeit potentially fruitful, space for

organizations to strive to create valuable experiences. Intense emotions stemming from social movements can increase the value of these experiences for “rebels”. Undoubtedly, involving in such “rebellious” experiences is a high-risk decision for brands. In particular situations such step may be profitable, however, managers should be aware of its possible destructive effects.

Space

When many actors are involved in the co-creation process, the technical problem of collaboration arises, i.e. how to organize the workflow, communication or simply the integration of resources. Of course, it all depends on the type of experience to be co-created: Perhaps a physical product needs to be produced, or a specific service or a series of services needs to be organized, such as a vacation event, etc. Undoubtedly, different types of products and services should be considered individually. Moreover, the character of the offer is essential: whether it is produced as a physical object or takes place in a virtual world. Physical production requires materials, physical space and machinery, while creating a virtual product or service for a mobile device requires specific knowledge and skills but can take place even if the actors involved never meet in person. All in all, what matters in co-creation is not only the number and character of the people involved but also their preferences or access to resources. All this poses a significant challenge for managers to create a suitable space for collaboration.

One of the most critical conditions for co-creation is a dialog (Mukerjee, 2012). Thus, the goal of creating an appropriate space for co-creation is to create a work environment where all participants feel valued and can speak freely. It is then collaboration that becomes the natural source of value creation (Rogoziński, 2012) If the space guarantees this, there is a chance that the actors will willingly engage in the process. Moreover, every contact with this co-working space affects the further decisions of an individual and, therefore, it is necessary that the meetings must leave positive feelings and memories. In the literature, such a space for the co-creation of experiences is called an experiential environment. It consists of products and services that are part of an experience but also of communication channels and forms of collaboration between all actors involved (Baran, 2013). According to Giddens' structuration theory, the experience environment is not a physical place but a kind of wisdom of the actors that they use in their interactions to create value (Ibidem). It becomes a frame of reference that enables numerous co-creation experiences with multiple subjects (Pralhad, Ramaswamy, 2005). Moreover, the experiential environment enables an actor not only to co-create a personalized experience but also to live through it.

Process

The co-creation of experience is a process and, therefore, some points must be considered. First, as with any process, it is a series of recurring actions. Since an experience is built up over time through numerous touch points, repeatability should be insurance for at least a stable, long-lasting quality. But even if the experience must include an element of entertainment, it must be determined precisely whether the customer feels better when an experience is repeated in a systematic way or when it is the surprise that is repeated. Of course, it's much better if the quality of the experience increases in the right way, especially if competitors are working it out. So this process needs to be a continuous learning cycle. Managers should evaluate the process based on current circumstances and track competitors' actions. With this in mind, managers must pay close attention to the process, all prerequisites and outcomes, and the conditions of the environment. It may seem helpful

to take the micro-perspective, which allows one to see the roles of each actor involved in the process, their motivations, and interdependencies. The macro-perspective, on the other hand, shows the entire process in a specific context, which is impossible from the standpoint of management analysis. Although different researchers choose either the micro or the macro-perspective, some propose a specific combination of these two perspectives, which they call the “Zizo movement”, i.e., they adopt either the micro or the macro perspective as needed (Leroy et al., 2013). Another critical issue in the process of co-creating experiences is the control. Researchers disagree on the ideal way to control and measure this process. Godovykh and Tasci provide an example of seven measures for experience management (Godovykh, Tasci, 2020). Palmer finds three main reasons for the unsuccessful attempts to construct a universal measure (Palmer, 2010), including the complexity of an experience, its nonlinearity, and the lack of an ideal experience as a reference point. Another question would be whether there are specific existing marketing measures that should be considered alongside this one. Klaus and Maklan give three examples, such as market share, the share of wallet, and ultimately profitability (Klaus, Maklan, 2013). However, it might also be helpful to link them to measures such as Net Promoter Score or brand awareness.

Interactions

Since interactions determine the final, co-created experience, it is vital to analyze their characteristics. The most essential attributes of interactions are frequency, duration, type, and the roles played by the interacting actors. First, the more frequent and more prolonged the interactions, the greater the chance of reaching an agreement on the nature of the collaboration and the final value. Second, different types of interactions require specific actions, e.g., random visits to a website are not as demanding in terms of communication as the daily co-creation of a new product version. This leads to the roles that each actor involved in co-creation takes on when interacting with others. The roles can be taken based on different aspects, such as the actions performed or the stage of the value-creation process, etc. (Cova, Dalli, Zwick, 2011).

Although the experience was not always a rudimentary economic proposition, interactions began to play a significant role in value-creation processes in the early XXI century. At that time, service became a fundamental form of exchange, and researchers understood it as the integration of specific knowledge and skills (Vargo, Lusch, 2004). Sharing these resources required interaction with other actors, which quickly emerged as one of the most critical management decisions. Managing interactions among participants in the value creation process is at the core of customer relationship marketing. However, researchers are beginning to view it as insufficient to achieve the expected level of value. They are presenting customer experience management as a method to overcome the limitations of customer relationship management (Palmer, 2010).

Experience management can facilitate relationship management by providing deeper insight into the interactions themselves. As the number of actors with different backgrounds and purposes grows in the process of co-creating experiences, it becomes increasingly difficult not to lose sight of the fact that each of them is involved in the creation of value and perceives it personally. Ramaswamy and Ozcan have even introduced a new type of value, interactive value creation, instead of use value (Ramaswamy, Ozcan, 2018). Therefore, it is significant that all stakeholders must interact with each other on an equal footing in a spirit of partnership and trust. As mentioned earlier, interactions in the co-creation process lead to the dialog, which is one of the most essential pillars of

co-creation. Moreover, all the interactions acquire more significance regarding the specific context in which they happen (Gummerus, 2013). Thus, managing the interactions (and relations in the long run) requires being attentive to the context of the interaction as such but also to the context as a prism through which each actor understands the world.

Satisfaction

As different researchers proved, there is strong evidence between the value and satisfaction of experiences (e.g. Prebensen et al., 2016). It is said that the level of satisfaction reflects the cumulative evaluation of value from the repetitive interactions building up the whole experience (Maubisson, Riviere, 2021). Undoubtedly, the final level of satisfaction depends on various factors, for example, expectations, costs, motivations, etc. What is more, research results show that actors who engage in the process of creating the market offer evaluate the outcome higher than if they did not cooperate (Troye, Supphellen, 2012).

High (and increasing) actors' satisfaction is crucial for different reasons: the very first one is simply the positive attitude to the product or service or brand, potentially followed by purchase behaviour. Furthermore, afterwards, it may be helpful to tie the customer with the brand and convince him to re-purchase. It may encourage him to recommend the product, or the brand (or the experience!) to others or even to become loyal. For the co-creation process, it is also essential to fill the actors with positive emotions and a high level of satisfaction. Otherwise, they will not engage in the process again in the future, nor will they share their resources. Withholding cooperation carries the risk of not finishing the project at all or turning the effects into value destruction. One actor dissatisfied with the process or the value proposition may become a value destroyer for other actors or the whole company. A dissatisfied customer may discourage potential clients from engaging with the organization (Kumar, Rajan, 2017). The interesting though bothering fact is that many companies do analyze the potential for value destruction only after it becomes a fact, not during the first stages of the process (Mahajan, 2019). In the worst case, the customer would integrate their knowledge and competencies into a co-creation process of a competitor.

Transformation

Although the experience is said to be the most developed economic offer available on the market, it is just a matter of time before it will be replaced with a new kind of value proposition. As before, the novelty will be the existing experience with a specific additional trait. Pine and Gilmore predict the next offering to be transformations, "delivered through the transforming experience during the era of the transformation economy" (Pine, Gilmore, 2011). Following previous considerations, the experience will be augmented by the transformational layer. Through transformation, they understand a situation in which the acquired experience is of such importance that it makes changes to the behaviour of the individual (Kukk, Leppiman, 2016). The value lies not in the experience itself but in the following happenings, such as original perspectives, altered attitudes, or even predispositions for the purchase behaviour change. The focus of the transformative value proposition is on the customer's well-being (Rosenbaum, 2015). For that, Blocker and Barrios evoke the metaphor of a butterfly, the change is so uplifting that one cannot imagine returning to the previous stage (Blocker, Barrios). When customers and other actors see the need for change, they might engage in experience co-creation. If so, the final value might be even higher if they bring this change with their work or resources.

However, the change does not have to concern just an individual's life. Each subject on the market may spot the need for transformation in the surrounding world. In theory, it makes no difference if the transformation concerns the individual, the specific group, or the whole society. A change for one may, with time, become a change for many. Therefore, as has been signalled before, some organizations offer "rebellious" experiences. By destroying the current order of society, they propose a new way of living (for an individual or a group) or an unusual approach which, for example, raises the awareness of a critical case. Thus, a transforming experience may alter the behaviour of one person or a group. Also, the change may begin with one person who then inspires others. Despite the transformation as a new kind of economic offering, this term is crucial for one more reason. It is not only the value proposition that changes but also the way of creating it. So, it is the transformation of the whole business that needs mentioning. Firstly, there is the co-creation process in which many actors are invited. In this case, it is no longer the company alone who creates the value proposition. Secondly, it is the actors' willingness to engage and take control and responsibility for the created value proposition. As has been highlighted, this is followed by personal benefits for each actor, accorded with their motives for engaging in the co-creation process. Then, it is the transformation of the way of doing business. Prahalad and Krishnan illustrate this with two new business rules, according to which all companies must focus on one client's experiences at a time and come into possession of resources from around the world (Pralhad, Krishnan, 2010). It is nothing more than co-creating personalized experiences by engaging the actors in the process and allowing them to form value as they wish it to be.

5. DISCUSSION & MANAGERIAL IMPLICATIONS

Considering the market advantage, the experience co-creation process seems to be a way to gain an advantage over competitors. First of all, contrary to products and services, experiences are constructed much within one's mind, based on memories, feelings, etc. This is the main reason why they should be regarded as individually subjective. Therefore, experiences are pretty hard to imitate, so rivals would find it competing problematic. Thanks to the fact mentioned in the previous point, it is the subjectivity of the customer's mind that is impossible to imitate. However, all the stimuli prepared by the company may be more or less mirrored by a competitor, and this is where the risk is. Secondly, even if competitors would try to keep up with the kind of value proposition, due to distinctive factors, the final co-created experience might be diverse. This may then be an excellent method for market differentiation. Thirdly, as establishing cooperation with other market players may to be a win-win situation and result in benefits for all participants, a well thought co-creation process might be a method for success for all the involved parties. This also would be a sign of changing the way of "doing business".

However, managing the experience co-creation process is not a simple task. As with every process, it has limitations and may bring risks for the participants. First and foremost, its main characteristic is uncertainty. Even though all the operations should be carried out with a great dose of transparency and trust among all parts, there is always a risk of missing the right point. There may be many reasons for this, i.e., misunderstandings, unexpected permutations in the environment, the discrepancy between intentions and results, or even – at worst – purposeful misleads of any participating subjects. Then, the complexity of this process sometimes makes it arduous to manage (or even to start managing). One of the points made by the researchers is that usually, the literature describes specific elements of

the co-creation process and not the exact method of managing it. Extremely complex, the process consists of multiple components, and there is no consensus among researchers on how to correctly measure its effects since no indicator or scale catches the experience in total (Godovykh, Tasci, 2020). Therefore, companies may be unprepared for such an effort or find it too overwhelming. Fortunately or not, in the demands of the XXI century it is not the question of whether to manage the experience co-creation process, but how to do it as well as possible.

6. LIMITATIONS

This study is not without limitations. First of all, the concept of experience co-creation is highly complex and thus, the topic has been exhaustively, but not fully discussed. A significant number of factors remain not considered. However, they may have a massive impact on the process, e.g., the type of the final beneficiary of value, the profile of the organization, or the relations of the online-offline reality. However, the article aimed to take a look at the process from a macro perspective and create as broad picture of it as possible. Secondly, the article intends instead to draw attention to the problem, not to discuss it intensely due to its mentioned complexity which may be overwhelming for such a short paper. Thus, it is evident that each factor determining the experience co-creation process should be examined separately but with significant consideration of the whole picture. Finally, experience management remains a relatively fresh concept, and as organizations decide to put theory into practice, practical observations may bring experience and knowledge. It is then highly advocated to contribute to the knowledge-broadening process by:

- aiming at the proper experience co-creation process description (including its elements and dependencies between each of them),
- indicating the weak points of the process which may pose a potential risk for the final value formation and the customer's satisfaction,
- finding practical solutions for managing the process, such as best measure invention.

Therefore, taking into account the above, further research on this topic is strongly recommended.

REFERENCES

- Addis, M., Holbrook, M.B. (2001). *On the conceptual link between mass customisation and experiential consumption: an explosion of subjectivity*. "Journal of Consumer Behavior", Vol. 1, No. 1.
- Ballantyne, D., Varey, R.J. (2006). *Creating value-in-use through marketing interaction: the exchange logic of relating, communicating and knowing*. "Marketing Theory", Vol. 6, No. 3.
- Baran, G. (2013). *Marketing współtworzenia wartości z klientem. Społecznotwórcza rola marketingu w procesie strukturacji interakcyjnego środowiska doświadczeń*. Kraków: Instytut Spraw Publicznych UJ.
- Baran, G. (2019). *Od marketingu doświadczeń do design thinking, czyli o budowaniu uniwersytetu wokół kultury doświadczenia*. Kraków.
- Blocker, C.P., Barrios, A. (2015). *The transformative value of a service experience*. "Journal of Service Research", Vol. 18, No. 3.
- Brandys, J. (2016). *Experiential marketing – assumptions and prospects*. "Zeszyt Naukowy. Wyższa Szkoła Zarządzania i Bankowości w Krakowie", No. 41.

- Boguszewicz-Kreft, M. (2010). *Doświadczenie jako propozycja wartości dla klienta*. „Zeszyty Naukowe Polityki Europejskiej. Finanse i Marketing”, Vol. 3, No. 52.
- Ciekanowski, Z., Majkowska, J., Załoga, W. (2018). *The influence of the environment on the functioning of the organization*. “Modern Management Systems”, Vol. 13, No. 4.
- Cova, B., Dalli, D., Zwick, D. (2011). *Critical perspectives on consumers’ role as “producers”:* broadening the debate on value co-creation in marketing processes. “Marketing Theory”, Vol. 11, No. 3.
- Edvardsson, B., Tronvoll, B., Gruber, T. (2010). *Expanding understanding of service exchange and value co-creation: a social construction approach*. “Journal of the Academy of Marketing Science”, Vol. 39, No. 2.
- Eggert, A., Ulaga, W., Frow, P., Payne, A. (2018). *Conceptualizing and communicating value in business markets: from value in exchange to value in use*. “Industrial Marketing Management”, No. 69.
- Ellway, B.P.W., Dean, A.M. (2016). *The reciprocal intertwining of practice and experience in value creation*. “Marketing Theory”, Vol. 16, No. 3.
- Forlizzi, J., Ford, S. (2000). *The building blocks of experience: an early framework for interaction designers*. DIS '00: Proceedings of the 3rd conference on designing interactive systems: processes, practices, methods and techniques.
- Godovykh, M., Tasci, A.D.A. (2020). *Customer experience in tourism: a review of definitions, components, and measurements*. Tourism Management Perspectives, No. 35.
- Grönroos, Ch., Voima, F.P. (2011). *Making sense of value and value creation in service logic*. “Hanken School of Economics Working Papers”, No. 559.
- Gummerus, J. (2013). *Value creation processes and value outcomes in marketing theory: strangers or siblings?*. “Marketing Theory”, Vol. 13, No. 1.
- Haase, M., Becker, I., Pick, D. (2018). *Alternative economies as marketing systems? The role of value creation and the criticism of economic growth*. “Journal of Macromarketing”, Vol. 38, No. 1.
- Kallmuenzer, A., Peters, M., Buhalis, D. (2019). *The role of family firm image perception in host-guest value co-creation of hospitality firms*. “Current Issues in Tourism”, Vol. 23, No. 19.
- Klaus, P., Maklan, S. (2013). *Towards a better measure of customer experience*. “International Journal of Market Research”, Vol. 55, No. 2.
- Kleber, D., Volkova, T. (2017). *Value co-creation drivers and components in dynamic markets*. “Marketing and Branding Research”, Vol. 4, No. 3.
- Kowalkowski, Ch., Persson Ridell, O., Rödell, J., Sörhammar, D. (2012). *The co-creative practice of forming a value proposition*. “Journal of Marketing Management”, Vol. 28, No. 13–14.
- Kuikka, A., Laukkanen, T. (2012). *Brand loyalty and the role of hedonic value*. “Journal of Product and Brand Management”, Vol. 21, No. 7.
- Kukk, J., Leppiman, A. (2016). *Value creation in business services through the prism of experience economy: conceptualizing value-in-experience*. “Journal of Creating Value”, Vol. 2, No. 2.
- Kumar, V., Rajan, B. (2017). *What’s in it for me? The creation and destruction of value for firms from stakeholders*. “Journal of Creating Value”, Vol. 3, No. 2.
- Laming, C., Mason, K. (2014). *Customer experience – an analysis of the concept and its performance in airline brands*. “Research in Transportation Business and Management”, No. 10.

- Leclercq, T., Hammedi, W., Poncin, I. (2016). *Ten years of value co-creation: an integrative review*. "Recherche et Applications en Marketing", Vol. 31, No. 3.
- Lemon, K.N., Verhoef, P.C. (2016). *Understanding customer experience throughout the customer journey*. "Journal of Marketing", Vol. 80, No. 6.
- Leroy, J., Cova, B., Salle, R. (2013). *Zooming in VS zooming out on value co-creation: consequences for BtoB research*. "Industrial Marketing Management", Vol. 42, No. 7.
- Lusch, R.F., Vargo, S.L., O'Brien, M. (2007). *Competing through service: insights from service-dominant logic*. "Journal of Retailing", Vol. 83, No. 1.
- Mahajan, G. (2017). *Value dominant logic*. "Journal of Creating Value", Vol. 3, No. 2.
- Mahajan, G. (2019). *Critically exploring value destruction to create more value*. "Journal of Creating Value", Vol. 5, No. 1.
- Maubisson, L., Riviere, A. (2021). *More value for more satisfaction? The moderating role of the consumer's accumulation of experience*. "Recherche et Applications en Marketing", Vol. 36, No. 1.
- Minkiewicz, E., Evans, J., Bridson, K. (2014). *How do consumers co-create their experiences? An exploration in a heritage sector*. "Journal of Marketing Management", Vol. 30, No. 1–2.
- Moeller, S., Ciuchita, R., Mahr, D., Odekerken-Schröder, G., Fassnacht, M. (2013). *Uncovering Collaborative Value Creation Patterns and Establishing Corresponding Customer Roles*. "Journal of Service Research", Vol. 16, 4.
- Mukerjee, K. (2012). *Customer experience management: a framework for successfully managing the customer experience*. "SIBM", No. 4.
- Okreglicka, M., Lemańska-Majdzik, A., Gorzeń-Mitka, I. (2016). *Learning organizations and their adaptability to market environment*. Proceedings of the 9th International Scientific Conference "Business and Management".
- Palmer, A. (2010). *Customer experience management: A critical review of an emerging idea*. "Journal of Services Marketing", Vol. 24, No. 3.
- Pine, B.J., Gilmore, J.H. (2011). *The experience economy*. Boston: Harvard Business Review Press.
- Pitelis, Ch.N. (2009). *The co-evolution of organizational value capture, value creation and sustainable advantage*. "Organization Studies", Vol. 30, 10.
- Plessis du, L., de Vries, M. (2016). *Towards a holistic customer experience management framework for managers*. "South African Journal of Industrial Engineering", Vol. 27, No. 3.
- Prahalad, C.K., Krishnan, M.S. (2010). *Nowa era innowacji*. Warszawa: PWN.
- Prahalad, C.K., Ramaswamy, V. (2005). *Przyszłość konkurencji. Współtworzenie wyjątkowej wartości wraz z klientami*, Warszawa: PWE.
- Prebensen, N., Kim, H., Uysal, M. (2016). *Co-creation as moderator between the experience value and satisfaction relationship*. "Journal of Travel Research", Vol. 55, No. 7.
- Ramaswamy, V., Ozcan, K. (2018). *What is co-creation? An interactional creation framework and its implication for value creation*. "Journal of Business Research", No. 84.
- Roederer, C. (2012). *A contribution to conceptualizing the consumption experience: emergence of the dimensions of an experience through life narratives*. "Recherche et Applications en Marketing", Vol. 27, No. 3.
- Rogozński, K. (2012). *Zarządzanie wartościami z klientem*. Warszawa: Oficyna Wolters Kluwer.
- Rosenbaum, M. (2015). *Transformative service research: research that matters*. "Service Industries Journal", Vol. 35, No. 15–16.

- Shaw, C., Ivens, J. (2005). *Building Great Customer Experiences*. New York: Palgrave Macmillan.
- Siddike, M., Kohda, Y. (2018). *Co-creating value in people's interactions with cognitive assistants: a service-system view*. "Journal of Creating Value", Vol. 4, No. 2.
- Skowronek, I. (2012). *Marketing doświadczeń. Od doświadczeń klienta do wizerunku firmy*. Poltext, Warszawa.
- Stasiak, A. (2014). *Doświadczenie – stary nowy paradygmat turystyki*. „Folia Touristica”, Vol. 41, No. 2016.
- Teixeira, J., Patrício, L., Nunes, J.N., Nóbrega, L., Fisk, R.P., Constantine, L. (2012). *Customer experience modelling: from customer experience to service design*. "Journal of Service Management", Vol. 23, No. 3.
- Troye, S.V., Supphellen, M. 2012. *Consumer participation in coproduction: I made it myself effects on consumers' sensory perceptions and evaluations of outcome and input product*. "Journal of Marketing", Vol. 76, No. 2.
- Vargo, S.L. (2008). *Customer integration and value creation: paradigmatic traps and perspectives*. "Journal of Service Research", Vol. 11, No. 2.
- Vargo, S.L., Akaka, M., Vaughan, C. (2017). *Conceptualizing value: a service-ecosystem view*. "Journal of Creating Value", Vol. 3, No. 2.
- Vargo, S.L., Lusch, R. (2004). *Evolving to a new dominant logic for marketing*. "Journal of Marketing", Vol. 68, No. 1.
- Verhoef, P.C., Lemon, K.N., Parasuraman, A., Roggeveen, A., Tsiros, M., Schlesinger, L.A. (2009). *Customer experience creation: determinants, dynamics and management strategies*. "Journal of Retailing", Vol. 85, No. 1.
- Voima, P., Heinonen, K., Strandvik, T. (2010). *Exploring customer value formation: a customer dominant logic perspective*. Helsinki: Hanken School of Economics.
- Zeithaml, V.A., Verleye, K., Hatak, I., Koller, M., Zauner, A. (2020). *Three decades of customer value research: paradigmatic roots and future research avenues*. "Journal of Service Research", Vol. 23, No. 4.
- Zhang, W., Li, J., Sha, Z., Wang, X. (2010). *Customer experience management models: perspectives from environment, psychology and strategy*. Proceedings of 2010 International Conference on Management and Service Science.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.28

Grażyna OSBERT-POCIECHA¹

MANAGEMENT IN A DYNAMICALLY CHANGING REALITY: CONSEQUENCE VERSUS NON-CONSEQUENCE

This article analyses the importance of consequence and non-consequence as conditions for effective management. In conditions of continuous and imminent change taking place both within companies and in their environment (described by the VUCA and BANI models), the role of consequence in management, understood as achieving one's goal(s), is also changing. Given the tendency towards the atrophy of consequence, increasing chaos, and the appearance of various types of paradox, there is a need to "be non-consequential", in particular in the strategic dimension of management. The results of a survey on Polish managers' perceptions of consequence and non-consequence are used to exemplify the theoretical considerations. The results indicate a "deep-rooted" tendency to maintain consequence within the traditional approach to management. This points to a need to increase the openness of Polish managers to non-consequence, which is desirable in the conditions of a dynamically changing reality.

Keywords: achieving aims, chaos, consequence, non-consequence, VUCA, BANI

1. INTRODUCTION

The traditional approach to managing an enterprise for a long time perpetuated the need to be consequent as a determinant of the effectiveness of realising aims and achieving success. The model of relentless pursuit of aims became an unquestioned standard, and an imperative for managers and enterprises in all aspects and dimensions of their operation. Uncompromising (stubborn) efforts to achieve selected/defined aims were until recently treated even as a guarantee of achieving effectiveness, ensuring a relatively stable competitive advantage and future development. Currently, in a dynamically changing world, an increasing number of indications are emerging that the domination of consequence should be broken; indications that even recommend 'being non-consequential' to managers putting into effect management processes within organizations. There is therefore a need to verify (conduct broader research on) the possibility of maintaining the existing primacy of consequence, as well as the essence and role of non-consequence as a possible antidote to the features of a diametrically changed reality which are approaching chaos, that is a state in which there is no chance of maintaining any

¹ Grażyna Osbert-Pociecha, Wrocław University of Economics and Business, Poland; e-mail: grazyna.osbert-pociecha@ue.wroc.pl. ORCID 0000-0003-1951-0062.

form of order, or of ensuring the repeatability of and adherence to rules. It is also interesting (and important) to examine whether we are ready for such a 'breakthrough' in management, and whether managers are prepared for such a change, e.g. they have suitably trained skills or have at their disposal the relevant tools etc. In the conditions of the 'new normal' (Świerżewski, 2012), is it possible to refer to non-consequence to satisfy natural needs related to the functioning of every organization/enterprise, that is those needs related to ensuring the effectiveness of action, and maintaining competitiveness and a feeling of security? This initiating and explorative paper addresses this issue and draws attention to certain threads that will require confirmation and development in further research (literary and empirical). It is merely an initial attempt to structure this complex subject material, and is the result of reconnaissance into the need for preparation of a full research project.

2. DESCRIPTORS OF A CHANGING REALITY.

For almost 40 years we have lived in a world defined by the term VUCA (an acronym of *Volatility, Uncertainty, Complexity, Ambiguity*)². This term is used to reflect the highly complex and unstable environment in which enterprises currently operate. Adapting to the requirements of VUCA is today a huge challenge for managers, who are unable to avoid confrontation due to the ever-changing contemporary reality. B. Johansen (Euchner, 2013) used the VUCA conceptual framework (model) to demonstrate how turbulent changes can affect an organization, arguing that there is a need to move away from traditional management (leadership) due to a lack of effectiveness. On the one hand, VUCA showed our helplessness in defining the world surrounding us, with no opportunity for controlling it. On the other hand, VUCA became a certain norm for an increasing number of firms/sectors that allowed them to decode what was happening in the organization's environment. With time, VUCA began to fulfil the role of a 'useful compass' in a world in which it is ever more difficult to understand/interpret, and in which it is increasingly difficult to take effective action. In this way, the model became a starting point for proactive solutions and the creation of action plans despite highly limited predictability and various types of turmoil. VUCA also became a means for not being overwhelmed by the fact that the paradigm based on cause-and-effect logic had ceased to function, or that it was useless to refer to trends and benchmarks or to organizational memory. VUCA provided an opportunity to not descend into a state of passivity, despite the awareness of not being in control of the fact that the borders were blurred between the external environment and the internal workings of the organization, and the tempo of necessary changes did not allow for suitable preparation for their implementation.

Initially, the VUCA concept framework was presented as a combination of 4 features of the changed reality, as well as 4 challenges for managers:

- *Volatility* – means an increasing tempo of changes (the occurrence of rapid and hard to predict changes), which undermined the sense of creating plans in the organization (they become immediately outdated).

² The term VUCA was introduced in the military around 1988, and was quickly transferred into other fields, becoming widespread in broadly understood business at the beginning of the 21st century (Grabmeier, 2020). Earlier, as a part of strategic analysis to describe the influence of key areas on the functioning of organizations the term PEST was used (an acronym of Political, Economic, Social, Technological) (https://mfiles.pl/pl/index.php/Analiza_PEST). An equivalent that appeared in the Polish literature is SPAM – an acronym of *Szybkozmienność, Płynność, Arcyzłożoność, Mętność* (*Rapidity, Liquidity, Extreme complexity, Turbidity*) (Grabowski, 2019).

- *Uncertainty* – means the lack of possibility to predict the future (surprise), which makes it difficult to react to requirements/impulses from the environment.
- *Complexity* – means the lack of possibility to understand events (problems) due to various overlapping ‘interwoven’ factors/conditions, and the difficulty in identifying the cause-and-effect chain.
- *Ambiguity* – means the lack of clarity (lack of knowledge), which makes it difficult to interpret the implications connected to taking decisions (increasing risk).

However, despite the obvious cognitive benefits, the borders (understanding) of the basic components of VUCA raised difficulties and limited the possibility of both undertaking further more in-depth research, as well as taking decisions (in particular those of a strategic nature). It was only in 2022 on the basis of systematic literature research from the period 1999–2021 that the conceptual framework of VUCA was fully structured (Taskan, Junca-Silva, Caetano, 2022). Today, characteristic signs of VUCA are clearly visible, and there is no doubt as to their universal presence, however, the problem that remains is finding a way to react to them.

The need to increase the applicability of the VUCA model, including formulating recommendations for managers, was noted by B. Johansen (2012) who expanded the VUCA conceptual framework by adding managerial implications to the individual components. Thus volatility, uncertainty, complexity and ambiguity were connected respectively with the following recommendations:

V-vision. This refers to counteracting volatility by creating a convincing vision of the firm/venture (together with defining the value for people resulting from it).

U-understanding. As a reaction to uncertainty, this relates to acquiring information from various sources (clients, suppliers, employees, competitors, shareholders), and creating channels/environments for open communication.

C-clarity. This refers mainly to clarity in people management i.e., maintaining the focus on achieving vision, preparing procedures for employees to complete tasks/processes, as well as ensuring their development oriented towards readiness to take action (take decisions) in changed conditions.

A-agility. This comes down to making adaptive action effective by testing solutions (experimenting).

The recommendations added under VUCA Prime are very important ‘road signs’ for company managers, however their use is related to the need to ‘transform’ them into concrete competencies and behaviours of individual managers/leaders, with a simultaneous distinction into those that

- should be maintained and even developed,
- should be abandoned (or their development should be halted),
- should be particularly focused on.

So that the move from traditional management to management in the VUCA world takes place without drawing out the transgressive changes over time, and avoiding negative consequences e.g., not fully adapting to the requirements of a chaotic environment.

A. Piątkowska (2021) took up the challenge of listing the competencies that ensure a leader’s effectiveness in a VUCA world. This is a list of 72 competencies, with each one connected to specific distinguishing features, which made it possible to create a broad spectrum of leader/manager competencies.

This list does not only contain competencies such as: the ability to be non-consequential, the competence to unlearn and re-learn once again, competencies related to

managing tension resulting from paradoxes, or the ability to implement *trade up* (both/and) principles. It can be noted that some component elements of these competencies are found as distinguishing features of competencies contained in the above-mentioned list e.g., in adaptive skills – *appreciating conflicting perspectives on solving a problem, the ability to stop if facts confirm that there is no chance of success*, in problem-solving skills – *use of non-standard solutions*, in coping with complexity – *considering different points of view*, in flexibility – *adapting to non-schematic solutions*. Of course, it is difficult to see this state of affairs as satisfactory, and it is evident that there is a need for further exploration of skills/competencies and manager/leader behaviours within management to ensure conditions for businesses to cope with intensified turbulence. In particular, in the search for an antidote to these conditions for the functioning of businesses, focus should be placed on identifying ‘new’ desired skills and behaviours e.g., being non-consequential, or demonstrating humility.

Concentrating on managers’ competencies is an important determinant of functioning in a VUCA world, but it does not mean that other equally crucial issues structuring broadly understood company management should not be taken into consideration. These are also subject to the effect of VUCA, and include decision-making, shaping organizational structure, work processes, resource management (including human resources) etc.

Are we capable of meeting these challenges, especially as we have still not been able to deal to a satisfactory degree with the reaction to VUCA, and we are already witnessing a further deepening/intensification of chaos in the reality in which organizations and employees function? (<https://zmiana.edu.pl/vuca-jest-juz-do-bani...>). This was expressed by J. Cascio (2020), who stated that the VUCA description of current reality does not allow us to a satisfactory degree to ‘exit’ towards the future. He therefore constructed the BANI model, assuming that:

- whatever is variable and unstable ceases to be reliable,
- people who feel unsure generate anxiety/fear and fail to take action,
- complexity no longer only has a structural dimension, but also results from the non-linear dynamics of individual component elements,
- it is increasingly harder (despite relatively easy access to data, information) for us to understand specific situations, take a step forward, or try to find our own path.

BANI here is an acronym of *Brittle, Anxious, Nonlinear, Incomprehensible*. Thus:

B – means that the world, the economy, the firm and human life are only seemingly merged/strong and reliable, and that as a result of the ‘wave effect’ can ‘fall apart’ or be subject to failure/catastrophe at any moment.

A – means that irrespective of what we do, both organizations and people live in constant fear (of what may happen or what may go wrong), remain tense and wait, and at the same time the generated fear creates a feeling of urgency which affects decisions/actions taken.

N – means a disconnect between cause and effect, or at least a lack of proportionality. An unimportant action can have devastating effects, and the consequences of any cause can result immediately or appear with a delay, be postponed or not appear at all.

I – means the lack of possibility to understand or find all possible answers/variants, and results from disorientation, becoming lost in an overload of data, and being overwhelmed by information, and in addition the answers obtained are not clear or convincing and do not provide opportunities for taking further action.

As can be seen, the BANI world, that is the reality described by the above-mentioned dimensions, is not easy to manage, and makes us realise the price of developmental changes of an achieved civilizational level. It also makes us realise the need to integrate all systems (economic, social, ecological, energy and political), and the need for particular care to prevent the dysfunction of these systems so as to make possible the further productive, balanced functioning of enterprises. The BANI conceptual framework brings sense to the chaotic world, indicating (despite the terror resulting from chaos) the possibility for building new approaches that allow for the continued functioning of organizations, amongst others by recommending: if something is fragile, the focus should be on finding resilience, if we feel anxiety, we should develop mindfulness and vigilance and empathy, to deal with non-linearity we should look for new contexts, new knowledge and adaptive opportunities resulting, for example, from new technologies. Meanwhile, lack of understanding should be dealt with by developing clear, more critical thinking, and by more often referring to as yet insufficiently appreciated intuition (Szaban, 2012).

In conclusion, the realities as described both by the VUCA and BANI models clearly emphasize that the current conditions for the functioning of enterprises are diametrically different, and that striving to implement in them current patterns of action (including management processes), as well as expecting the achievement of the desired results, are doomed to failure and put the enterprise in jeopardy (plunge it into chaos).

Seeking opportunities for survival and functioning in the future is related to the ability to abandon consequence as an absolute imperative, which at the same time requires more recognition for non-consequence as an act of courage and a way to achieve resilience, that is positive adaptation in the face of unfavourable conditions in the environment and managing the stress resulting from remaining in a chaotic reality, in which the rapidity of change and time pressure do not allow for procrastination (postponing decisions and action).

3. FROM TRADITIONAL MANAGEMENT TO CONSEQUENT NON-CONSEQUENCE IN MANAGEMENT

In the search for a designation of management, that is an answer to the question what is its essence (leaving aside the complexity and multi-dimensionality of the concept), it can be assumed that the essence of management is the 'forging' of goals into results. From the very outset, this has been a subject of great excitement connected with taking various types of action, using a variety of approaches and concepts and their related instruments, and focusing on the conditions of this process (in particular catalysts and barriers) in order to effectively and efficiently transform more or less sophisticated aspirations and intentions into concrete reality (products, services). Achieving these results (goals) giving a feeling of satisfaction, of agency, at the same time encourages the generation of further goals, and the undertaking of additional challenges so as not only to ensure continued functioning, but also social, economic and civilizational development, as well as the chance for survival in the future. Through their reference to the future and their attributes (for example the fact that in themselves they are a stimulus to action, that they allow for the integration of the actions of many entities/people, thus leading to achieving a synergy effect and making it possible to exercise control and make assessments) goals become the basis for satisfying our needs, both those related to maintaining the status quo as well as those connected to introducing changes and to development. As noted by S.P. Robbins and D.A. De Cenzo

(2019), setting goals is the first step to transforming what as yet does not exist (cannot be seen) into what becomes reality.

Such a view of the role of a goal³ (including a company goal) places huge pressure on ensuring an efficiency management process, which includes a choice/formulation phase and then a realization phase. Striving to effectively achieve a chosen goal is the expression of the need for success as a measure of the tasks accomplished.

One of the fundamental conditions of management oriented towards success understood in this way is maintaining consequence in striving to achieve a chosen (designated) goal. Being consequent has been consolidated as a determinant of the ultimate achievement of a goal in traditional management, and remained a model of conduct for many decades.

The commonly used standard of a cycle of organized actions, that is a set of actions within separate, subsequent stages that bring the achievement of a given goal closer, meant that the relation between consequence resulting from the realization of various stages of the cycle and the result as achievement of the goal became obvious. Identifying being consequent with ensuring the achievement of success was promoted by academics researching key factors in the success of organizations, as well as by practitioners implementing the recommendation of maintaining consequence as an implication of this research. Amongst others, J. Collins and J. Porras (2019), in their description of effective practices used by the best firms, drew attention to the development over many years (very consequently) of such conditions as a vision, a culture of decision-making and leadership.

Also worth mentioning here is the research of A. Duckworth (2016), the author of the GRIT concept, that is an acronym of *Guts, Resilience, Initiative, Tenacity* as predictors of success in achieving a goal. She demonstrated the driving force of tenacity (the Polish equivalent of GRIT) in striving to achieve a goal (in particular a long-term goal). Tenacity, understood here as persistence in the pursuit of a goal/goals is something more than merely trying to achieve a goal, it is the determination not to give up, to not 'abandon' a chosen goal. This is 'persistence' in the process of realizing actions in connection with passion, which generates a driving force of engagement for the achievement of a goal/goals in conditions where the realization process is spread out over time, and where there are a very large number of factors that constitute barriers on the path to the chosen goal.

With time, treating consequence as a key condition for effective achievement of a goal reinforced the belief that being consequent was an indicator of success, understood not only as the successful completion of a single cycle of organized action, but also as the organization's ability to develop over a long timeframe.

The encoding in the consciousness of the connection between consequence and success resulted in the appearance of an orthodox approach to achieving a goal through maniacal consequence and fanatical zeal in pursuing a goal, leading at times to the violations of moral principles and the 'destruction' of people (for such practices the principle was 'forged' that the aim justifies the means).

It is also worth noting that this specific 'career' of identifying consequence with organizational success is an exemplification of R. Cialdini's third principle – 'if something has been deemed right by the environment (the majority) – it is relatively easier to deem it correct and difficult to question it' (Cialdini, 2009).

Consequence, understood here as mainly resulting from cause-and-effect logic of the continuity/consistency of action, not on the basis of a one-off impulse/action, based on a specific method/arrangement, has become a value in itself in western culture. Its role in

³ Hereinafter, this concept is used in the singular, but can also refer to a group of goals.

the past, its current validity in various areas of life, for example in education and business, as well as sport and politics, and its importance in achieving success, and making progress and civilizational development are all undeniable.

In the past, consequence was treated as a particular ‘virtue’, both with regard to the organization as well as the manager/leader [Merriman, 2017], and was connected with various types of benefits, for example:

- developing habits that improved performance,
- creating procedures so as to avoid action based on fire-fighting,
- increasing the level of trust resulting from consistency of behaviours and attitudes,
- increasing discipline in the completion of subsequent tasks,
- nurturing relationships with various stakeholders (clients, employees etc.),
- working to achieve stability and a feeling of security.

However, consequence that refers to actions according to an accepted scheme (realized in one and the same way) and that respects the succession of events can constitute a certain form of trap, causing ‘imprisonment’ in a defined mode of thinking/acting that can block innovative solutions and creative thinking outside applied schemes. It can also intensify the desire to remain in the comfort zone and to strive to maintain the status quo at any price (resistance to changes).

Escaping to acceptance of abandoning previous choices, and moving away from accepted solutions results, among others, from the need to reach (in conditions of an accelerating pace of change, and the constant appearance of new impulses that require a reaction) for the attribute of the organization that is ‘ambidexterity’, or the ability to use ‘both hands’ with equal ease (skill), that is various solutions of a contrasting and sometimes conflicting nature (Tushman, O’Reilly, 2004). The *ambidexterity* of an organization that results directly from the ambivalence/duality of the reality that surrounds us naturally gives rise to the need to be non-consequential, especially when so far we have clung tightly in organization management only to ‘one side of the coin’, for example basing our activity only on hierarchical structures or avoiding the choice of outsourcing as an alternative to concentrating all activities resulting from realization of the business concept within the company’s organizational structure.

As noted by R. Krzeszewska (2022), striving for *ambidexterity* while accepting the effects related to being non-consequential and the occurrence of the risk of conflict generation can nevertheless lead to increasing the efficiency of management in a company functioning in the ‘new normal’.

Meanwhile, in practice we stubbornly hold on to the conventional approach to managing a company, that is patterns of thinking and acting based on linearity, without the inclination to allow for other alternatives, and we try to be all faithful to choices made earlier in conditions of difficult to ‘absorb’ dynamic changes caused, for example, by globalization, technological progress (digitalization), degradation of the natural environment etc. This is also related to the encoded assumption that we have to be rational, and in our thinking and acting respect logic, i.e. based on possessed knowledge about methods of action seen as not raising objections or doubts and appropriate for *homo oeconomicus*. Meanwhile, increasingly often the paradigm of classical economy that assigns people and organizations rationality is being undermined (Popowicz, 2004).

In exploring the essence of irrationality, D. Ariely (2018) shows and emphasizes that human nature is irrational, proving at the same time that humans are predictably irrational. This allows the stereotype of irrationality to be broken and should lead to a more positive

view of 'non-consequential' decisions/actions. In many cases, these are almost automatically qualified as irrational and therefore giving no guarantee of effective achievement of desired states in the future. In the current conditions in which businesses function, increasingly often the need arises to 'move' to a different goal (when facing the risk of not achieving the one chosen earlier, or it becoming outdated in the light of new needs, change of priorities etc.). It is important therefore that the non-consequence necessary in this regard is not treated orthodoxically as an irrational action so that a reality is not arranged in the company that would eliminate seemingly irrational solutions.

In light of the above considerations, it looks as if basing actions on being consequent as a stereotype shaped in times of enlightenment and scientism is no longer defensible, for example due to the fact that a lack of consequence often evokes a feeling of guilt, and we are unable in life as in management to be non-consequential enough in adequate proportion to a reality in which there is an ever more significant:

- lack of continuity (in transmitting thoughts, ideas, behaviours/traditions, values etc. to the next generation),
- violation of mental order based on logic,
- lack of possibility to identify cause-and-effect relations,
- occurrence of lack of trust in professional knowledge.

The above conditions generate pressure towards limiting the domination of consequence and broader acceptance of non-consequence in management (on the principles of complementarity).

It must be taken into account that in the management process, being non-consequential, questioning, resigning from current goals and the ways in which they are realized remains closely related to the skill of 'unlearning' (forgetting) and then quickly learning new things and acquiring/assimilating new knowledge, that is putting into practice A. Toffler's '*learn, unlearn and relearn*' cycle ([https://blog.learnlife.com/...](https://blog.learnlife.com/)). It is emphasized that this cycle will be the determinant of our work in the future. To date, we have seen a preference for the first phase of the cycle, i.e. learning and ensuring a growth in knowledge. The dynamic acceleration of changes in the company's surroundings as well as inside the company, and the accumulation of huge knowledge resources for use and their outdated (diminishing usefulness), are the reason for an increasing need to move to the stages of unlearning and relearning. The more we are able to unlearn, the greater the chances will be of assimilating knowledge that is useful in the context of new operating requirements.

Due to increasing volatility and unpredictability, traditional management methods and their related tools have limited possibilities and are ineffective [Hamel and Breen, 2008]. To ensure the efficient achievement of intended management goals, we are doomed to continually search for new paradigms. As a part of this search, at the beginning of the 21st century the focus was on the paradoxes that are written in to management (Polowczyk, 2014) and dealing with them is today a key challenge due to rising uncertainty, which 'pushes' organizations to the brink of chaos (Nestorowicz, 2001). Paradoxes in their essence maintain a tension between elements/poles that are connected to one another (Leja, 2013). Each of them is logically justified, even though they are opposites (such as inhaling and exhaling in the process of breathing), and do not 'at first glance' simply exclude one another. This provides the opportunity to generate innovative solutions not on the basis of *a priori* rejection of the other pole, but by skilfully integrating the dichotomous elements of the paradox (Lewis, 2000). Until now, by ignoring these possibilities in order to reduce the tension related to paradoxes and to simplify management, the choice was made to

adhere to one of the options, moving away from taking other possibilities into consideration and thus giving in to the tyranny OR (a selection on the basis of *either/or-trade off*) and avoiding exposure to non-consequence. It has been noted that the future of dealing with paradoxes and reducing their immanent tensions will require managers implementing the management process to bring these tensions into the daylight, merge opposites i.e., submit to the genius of 'AND' (choice on the basis of *both/and-trade up*), smoothly move from the goals and solutions from one pole to the goals/solutions located at the opposite extreme, which will inevitably will require giving up, abandonment, resignation that is being non-consequential, and the ability to unlearn that which 'worked yesterday but no longer works today' (<https://app.santorski.pl/...>)₂.

W.K. Smith, M.W. Lewis and M.L. Tushman (2016) claim that dealing with paradoxes requires managers to accept their nature, which does not mean 'switching' from one extreme to the other, but is more about seeking solutions that as an answer to the attempt to explore and investigate the essence of this conflict/contradiction will stand out by their consistency and adherence to current requirements and to the dynamics of events. Therefore, (ambidextrous) managers/leaders must in these conditions be consequently non-consequential and concentrate on management with a lack of consequence (in particular at the level of strategic paradoxes⁴).

To summarize the above considerations on the future of company management, due to the dynamically changing environment, the problem arises of the appropriate ability/readiness to be non-consequential.

4. PILOT STUDY INTO THE PERCEPTIONS OF CONSEQUENCE AND NON-SEQUENCE IN MANAGEMENT AMONG POLISH PRACTITIONERS

4.1. Research aim and methods

The research was conducted in the second half of 2022 using the pilot study method, and via a questionnaire that was distributed to respondents by email (analogically to CAWI). To avoid a key drawback of the CAWI method (lack of or not complete control on the part of the researcher) and to ensure that reliable empirical material was obtained, at the stage of research sample/respondent selection as part of stage triangulation, so-called arrangement (Sztabiński P.B., Sawiński, Sztabiński F., 2005). of stages was used characteristic for interview techniques⁵.

⁴ Of course, at the level of operating activities realized in a short timeframe, the strength of the effect of paradox tension (e.g., between goals related to financial results and the company's social mission) is weaker, and it is understandable that in order to reduce such tension, task owners select one option and are consequent in bringing it to realization.

⁵ Arrangement is the activity of the researcher related to acquiring a respondent who fulfills the adopted sample selection criteria, and then explaining to them the aims and subject of the research (information phase), as well as encouraging/convincing them to participate in the research (persuasion phase). As a stage in the research process, although arrangement may be time-consuming, it allows the researcher to eliminate random respondents who do not identify with the aim of the research (although identifying with the aim does not have to mean a lack of objectivity), and thus increases the chances that answers to the questions contained in the questionnaire will be of suitable quality. This stage is particularly desirable in situations where the subject/examined phenomenon shows itself to be complex, and the participation of respondents does not simply come down to registering specific facts (previously documented 'blindingly obvious' facts), but requires

Purposeful selection of the research sample was used by inviting people to join the research who are/were clients of one training and consulting firm in Wrocław (i.e., the owners of firms/businesspeople, managing directors (presidents and board members of firms, managing directors of operations), and project team leaders). The questionnaire contained metrics relating to the characteristics of the respondents and the organizations they represent, as well as questions on the examined issues.

In total, 54 people (N=54) took part in the research, and as this sample does not meet the criterium of representativeness, the results of the research do not provide a basis for the generalization of the conclusions. Nevertheless, the obtained data can be used to form notions/opinions on the presence and role of both consequence and non-consequence in company management by Polish practitioners. It is also intended that the questionnaire results be used to formulate and verify detailed research hypotheses as part of a planned research project.

The research focused on obtaining answers to the following issues:

- how deep-seated in the management process is the belief about the cause-and-effect connection between consequence and achieving goals; are differences noted between consequence and perseverance.
- how do 'being consequent' and 'being non-consequential' manifest themselves (symptoms) and what do they come down to in being a manager in practice.
- what can be the effects of non-consequence in management practice (is non-consequence a sin or a virtue).

4.2. Selected research results

In terms of the characteristics of the research sample, 22.2% of the respondents were people in the position CEO of company, 48.2% were businesspeople/company owners, and the remaining 29.6% were operations directors or team leaders. The largest proportion of the research sample was made up of respondents with experience of 11–20 years (42.6%), slightly fewer (37%) had up to 10 years of experience, 16.7% of respondents had between 20 and 30 years of experience, while only 3.7% had over 30 years of experience. As for organization size (according to number of employees), large organizations made up 13%, medium-sized organizations 48.7% and small organizations 38.8%. In terms of scope of operations, the proportions were as follows: global reach – 5.6%, international – 11.1%, national – 42.6% and regional or local 40.7%. Taking into consideration the phase of the organization's lifecycle, 9.3% were in the birth phase, 46.3% in the growth phase and 44.4% in the mature phase.

Due to a lack of limitations regarding the scope of operation of the organizations, the research sample included a very broad spectrum of sectors, including industrial processing, construction, agriculture, transport, logistics, trade, material and non-material services, healthcare and others (the structure of the sample according to sector was ultimately not determined). In terms of the criterium regarding economic and financial condition, notable in the self-assessment of the examined organizations was a worsening of this condition in 2021 in comparison to 2020; there was a drop in the proportion of entities in very good and good condition, respectively 38% and 25%, down from 52% and 40%. Meanwhile, there was an increase in the proportion of entities in the group with an average economic and financial condition.

the use of creative thinking to explore the examined phenomenon in depth, and to make a balanced assessment with the use of various perspectives, as well as demonstrating the ability to anticipate.

Below are the results related to some questions contained in the questionnaire:

Question 1. *As a manager, are you convinced that consequence in the management process determines success, i.e., the efficient and effective achievement of defined goals?*

In answer to this question, 81% indicated YES, 8% selected NOT ALWAYS, and the remaining 11% considered that consequence is one of the many preconditions to success.

This demonstrates that the stereotype of identifying success with consequence is deeply rooted in the consciousness of managers/management practitioners.

Question 2. *In your management practice, despite dynamically changing operating (environmental) conditions, do you treat consequence as a priority?*

The answer YES ('I definitely use consequence') was selected by 68%, 22% selected the answer I TRY TO (despite everything), while 10% of respondents admitted that they do not treat 'being consequent' in an orthodox manner, and in the process of achieving defined aims allow for flexibility and openness to alternatives.

Question 3. *This referred to the understanding of consequence (its essence). The distribution of practitioners' answers on the suggested list was as follows (a maximum of 3 options could be selected):*

- not permitting a goal change (resignation); approval only for change in the means and/or modes of action for achieving a defined goal – 29.6%,
- preserving continuity of action necessary for achieving a goal in a specified time period – 16.0%,
- maintaining consistency with other goals – 7.4%,
- guaranteeing repeatability (acting according to schemes/patterns) – 9.8%,
- respecting the cause-and-effect relationship (rules of implication) -14.9%,
- eliminating various types of barrier/difficulty on the path to achieving a goal (including those relating to resources and modes of action) – 22.2%.

In light of these results, the most popular dimension of consequence in the management process is opposition to changes to previously selected goals, that in some way strengthens the above understanding of consequence in focusing on neutralizing and removing barriers preventing the achievement of a goal. The least often selected was concentration on consistency with other goals, which is interesting in that most often we are talking about a specific set of integrated goals (a specified goal structure).

Question 4. *In my opinion, do consequence and perseverance in the process of achieving a goal differ from one another?* The aim here was to verify whether managers/practitioners perceive there to be a difference between what appear to identical concepts. As shown by the answers (NO – 74.1% and YES – 25.9%), the majority identify these concepts with one another, treating them as synonyms. However, when formulating recommendations, it is worth differing between consequence, as in following a chosen path, a defined route that is treated as the only alternative for reaching a goal, while perseverance does not take into account abandoning the chosen goal, but assumes the possibility for correcting the path (sometimes the path is longer and less comfortable, or 'diverts' from the beaten track etc.). In business (and not only) it is worth knowing for which goals we should be consequent, and for which we should be perseverant.

Question 5. *In my opinion, in what way can non-consequence (symptoms) manifest itself in the management process – reaching goals?* The distribution of practitioners' answers on the suggested list was as follows (a maximum of 2 options could be selected):

- abandoning or resigning from previously selected goals/plans (diametrically different from the assumed realization) – 50%,

- abandoning, halting actions to achieve goals after the disclosure of facts (errors) that make impossible to fully achieve the goals – 30.5%,
- interest in/acceptance of new goals that appear on the basis of an opportunity (as an alternative to previously defined goals) – 19.5%.

All respondents clearly favoured the first option, with their next choice being non-consequence resulting from the lack of possibility of achieving satisfactory results, however, only a fifth of them noted that non-consequence can be the result of the appearance/concretization of opportunities (new possibilities).

Question 6. *This involved indicating the causes/sources of non-consequence in management (in goal achievement).* The distribution of practitioners' answers on the suggested list was as follows (a maximum of 3 options could be selected):

- outdated of goals selected for completion, change of priorities – 29.6%,
- irrational criteria not allowing for the selection of goals (emotions, intuition) – 4.9%,
- no possibility for full realization of defined goals (excessive risk) – 19.7%,
- appearance of a contradiction between the goal and individual interest groups – 12.3%,
- the entities engaged in the realization process do not identify with the selected goals – 12.9%.
- lack of responsibility among entities engaged in the goal realization process (not adhering to time constraints, budget limitations etc.) – 20.4%.

Here, external causes turned out to be obvious in making selected goals outdated and generating problems with their realization. Internal causes were also underlined e.g., contradictions related to interest groups, as well as entities not identifying with these goals.

Question 7. *In my opinion, can being non-consequential in management (in goal achievement) bring the company benefits e.g., improvement in financial results, increase in market competitiveness, improving the firm's image as an employer or as an entity that does not pose a threat to the environment etc.).*

37% of respondents answered YES to this question, while 63% did not perceive such possibilities, which seems to confirm the belief in the negative impact of non-consequence.

Question 8. *This also related to effects through the respondent conducting a self-assessment of previously used cases of 'non-consequence' in company management.* Here:

- 33.3% of respondents admitted the occurrence of unexpected/surprising benefits (market, financial, other e.g., related to improvement in the atmosphere in the organization, a rise in trust etc.),
- 51.8% of respondents considered that there had above all been negative effects i.e., worsening of financial results, worsening of relations with business partners etc.),
- 14.8% of respondents considered that in fact the remaining such practices were neutral i.e., they did not affect the company's situation.

Question 9. *This related to verifying how in general respondents perceived 'being non-consequential' in management (as a 'virtue' or as a 'sin').*

It is significant that almost 45% selected the option 'I don't know', with that 22.2% who selected the 'sin' option, it given result which in the overwhelming majority remaining in the conventional management paradigm, and not being convinced that non-consequence in current management conditions can be something that is desirable.

5. FINAL CONCLUSIONS

The literature review results and the pilot study results:

- confirm that the functioning of enterprises in the future is related to the need to go beyond the 'old world' framework, including the necessity of abandoning previously tried and tested patterns of conduct (consequence in the management process).
- confirm that managers implementing management processes on a daily basis are 'rooted' in the traditional approach to achieving goals.
- clearly signal the need to increase managers' tendency to make use of the skills of 'being non-consequential' in management in conditions of VUCA/BANI.
- underline the need for greater appreciation of non-consequence as an act of courage and a means of resilience i.e., positive adaptation in the face of unfavourable conditions in the environment, as well as managing the stress resulting from being in a chaotic reality, in which the rapidity of change and time pressure do not allow for procrastination (postponing decisions and actions).
- indicate that in order to formulate managerial implications (as a part of applicability), it is necessary to develop a more fully structured concept/dimensions framework for the concepts of both consequence and non-consequence, as well as systemization of various types of conditions related to their use.

REFERENCES

- Ariely, D. (2018). *Potęga irracjonalności. Ukryte siły, które wpływają na nasze decyzje*. Sopot: Wydawnictwo Smak Słowa.
- Cascio, J. (2020). *Facing the Age of Chaos* [Access: 16.12.2022]. Access on the internet: <https://medium.com/@cascio/facing-the-age-of-chaos-b00687b1f51d>.
- Cialdini, R.B. (2009). *Wywieranie wpływu na ludzi. Teoria i praktyka*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Collins, J., Porras, J.I. (2019). *Wizjonerskie organizacje. Skuteczne praktyki najlepszych z najlepszych*. Warszawa: MT Biznes.
- Duckworth, A. (2016). *Upór. Potęga pasji i wytrwałości*. Łódź: Galaktyka.
- Euchner, J. (2013). *Navigating the VUCA World; An Interview with Bob Johansen*. "Research Technology Management", t. 56, No. 1 (Jan /Feb).
- Grabmeier, S. (2020). *BANI versus VUCA: a new acronym to describe the world* [Access: 21.10.2022]. Access on the internet: <https://stephangrabmeier.de/bani-versus-vuca/>.
- Grabowski, W., Naumiuk, M., Rubin, J. (2019). *Zwinnologia. Innowacyjne podejście do zarządzania zmianą*. Warszawa: MT Biznes.
- Hamel, G., Breen, B. (2008). *Zarządzanie jutra*. Lublin: Wydawnictwo Red Horse.
<https://app.santorski.pl/bani-jak-odnajdywac-sie-w-chaotycznym-swiecie/>.
<https://blog.learnlife.com/learn-unlearn-relearn>.
<https://zmiana.edu.pl/vuca-jest-juz-do-bani-czyli-w-poszukiwaniu-odpowiedzi/>.
https://mfiles.pl/pl/index.php/Analiza_PEST.
- Johansen, B. (2012). *Leaders Make the Future. Ten new leadership skills for uncertain*. San Francisco: Berrett-Koehler Publishers.
- Krzyszewska, R. (2022). *Ambidexterity w polskiej terminologii z zakresu zarządzania*. "E-mentor", No. 3 (95) [Access: 30.01.2023]. Access on the internet: <https://www.e-mentor.edu.pl/artykul/index/numer/95/id/1571>.

- Leja, K. (2013). *Paradoksy w zarządzaniu organizacją. Wejście „do” czy wyjście „z” labiryntu*. „Przedsiębiorczość i Zarządzanie”, t. XIV, z. 13, cz. I.
- Lewis, M.W. (2000). *Exploring Paradox. Toward a more comprehensive guide*. „The Academy of Management Review”, t. 25, No. 4.
- Nestorowicz, P. (2001). *Organizacja na krawędzi chaosu*. Kraków: Wydawnictwo Profesjonalnej Szkoły Biznesu.
- Merriman, K.K. (2017). *Leadership and Perseverance*, Marques, J., Dhman, S. (eds), *Leadership Today*. Switzerland: Springer International Publishing.
- Piątkowska, A. (2021). *Przywództwo w świecie VUCA*. Gliwice: Onepress.
- Polowczyk, J. (2014). *Zarządzanie strategiczne jako wielowymiarowa przestrzeń paradoksów*. „Studia Oeconomica Posnaniensia”, Vol. 2, No. 2.
- Popowicz, K. (2004). *Racjonalność w zarządzaniu przyszłością*. „Organizacja i Kierowanie”, No. 4.
- Robbins, S.P., De Cenzo, D.A. (2019). *Podstawy zarządzania*. Warszawa: PWE.
- Smith, W.K., Lewis, M.W., Tushman, M. L. (2016). *Both/and Leadership*. „Harvard Business Review”, Vol. 94, No. 5.
- Szaban, J. (2012). *Intuicja i racjonalność w zarządzaniu*. „Współczesne Zarządzanie”, No. 4.
- Sztabiński, P.B., Sawiński, Z., Sztabiński, F. (2005). *Fieldwork jest sztuką*. Warszawa: Instytut Filozofii i Socjologii PAN.
- Świerżewski, Ł. (2012). *Nowa normalność w świecie biznesu*. „Harvard Business Review Polska”, No. 7–8.
- Taskan, B., Junca-Silva, A., Caetano, A. (2022). *Clarifying the conceptual map of VUCA. A systematic review*. „International Journal of Organizational Analysis”, Vol. 30, No. 7.
- Tushman, M.L., O'Reilly, Ch. A. (2004). *The Ambidextrous Organization*. „Harvard Business Review”, Vol. 82, No. 4.

Received: September 2022
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.29

Leszek PAWLIKOWICZ¹

THE ORGANISATIONAL STATUS OF SPECIAL FORCES IN THE ARMED FORCES OF NATO STATES

The process of separation of special forces (military special operations units) in the structure of the armed forces of NATO countries began in the 1980s. By the end of the Cold War, two states had done this: the United States and the United Kingdom (1987). By the end of the 20th century, they had been followed by France (1992) and Turkey (1994). This article describes the chronology of changes in this area up to January 2020, by which time 18 out of 29 NATO states had upgraded their special forces to the status of separate branches of their armed forces or troops. Two models of management had been adopted within the framework of the autonomization of the said units, which at the beginning of the 2020s comprised up to 5% of all armed forces.

Keywords: NATO, special forces, armed forces, structure, command

1. INTRODUCTION

Military Special Forces (MSF) – defined by NATO as: „Designated active or reserve component forces of national military services that are specifically organised, trained and equipped to conduct special operations”² – have become the subject of much scrutiny over the past three decades.

The dynamic development of these troops, also referred to as military special operations forces (MSOF) (See: *Allied Joint Doctrine for Special Operations...*, p. Lex-15), led to a significant increase in their importance in the structure of the armed forces of NATO

¹ Leszek Pawlikowicz, University of Rzeszow, Poland: e-mail: lpawlikowicz@ur.edu.pl. ORCID: 0000-0002-4389-1937.

² Allied Joint Doctrine for Special Operations, AJP-5, North Atlantic Treaty Organization, June 2013, p. Lex-15. A similar definition is provided in the US Department of Defense Dictionary of Military and Related Terms, stating that they are: „armed forces [...] organised, trained and equipped to conduct special operations with an emphasis on unconventional warfare capabilities”. In turn, according to the definition in the Polish Dictionary of National Security Terms, they are: „independent divisions and subdivisions, composed of selected, specially trained and equipped soldiers, prepared to operate in small groups of varying composition, in a high-risk environment” and to carry out tasks „of strategic or operational importance during peace, crisis and war”. In turn, Lt-Gen Dr Mieczysław Bieniek described them as: „military units adapted to perform unconventional and extraordinarily difficult tasks, both in times of peace, crisis and war” (See: *DoD Dictionary of Military and Associated Terms, Department of Defense*, November, 21st 2021; *Słownik terminów z zakresu bezpieczeństwa narodowego*, 2008; Bieniek, 2016).

countries. This process, involving their separation into a separate type of army or armed forces, began as early as the 1980s and has not, to date, been the subject of deeper comparative analyses³.

Therefore, the aim of this article is to present an outline of the structural transformations related to the aforementioned process, to present the two models of the functioning of the MSF formed during this period and to define their organisational status in the armed forces of the individual NATO countries, together with an indication of their personnel levels against the background of the entire armed forces.

As regards the methodology of inference, various methods used in the social sciences, particularly in the discipline of security sciences, were employed, with the most useful being empirical, quantitative and comparative methods, especially: the method of system analysis (with regard to determining the status of special forces in the armed forces of individual NATO countries), the method of decision-making and institutional analysis (with regard to presenting two models of functioning of the MSF) and the method of statistical analysis (with regard to determining their personnel levels against the background of the entire armed forces) (Buczyński, 2011).

The organisational status of special forces in the armed forces of NATO countries, together with the date of their possible organisational separation and an indication of their personnel levels against the background of the total armed forces of the Pact (according to data as of January 2020) is presented in the supplement attached to the article (See Appendix). It provided the basis for an in-depth analysis in the above-mentioned scope and for the presentation of the conclusions in para. 5.

2. PIONEERS OF CHANGE WITH THE OPTION OF DUAL SUBORDINATION

The first countries to opt for MSF (then still MSOF) autonomy within the existing force structure were (in chronological order): the United States and the United Kingdom. On 15 December 1980 – eight months after the failed attempt to free American hostages held in Iran (Williamson, 2020; Leebaert, 2010) – the *Joint Special Operations Command* (JSOC) was established, but its remit was extremely limited (ensuring interoperability, joint special operations tactics, standardising equipment, and planning and conducting joint exercises) and the structure had no command authority (Bushman, 2010). This changed only a few years later – on 16 April 1987 – with the creation of the independent *U.S. Special Operations Command* (USSOCOM). Subordinate units were already operationally subordinate to the new command (in practice for the duration of a given operation, but in terms of developing combat doctrine, tactical use, training standards, readiness control and promotion path, budget planning and acquisition of special equipment – oversight USSOCOM was constant), while administratively they continued to be part of all four branches of the *U.S. Armed Forces* (within which they had previously operated): *United States Army* (U.S. Army), *United States Air Force* (USAF), *United States Navy* (U.S. Navy) and *United States Marine Corps* (USMC) (Fredriksen, 2012; *United States Special*

³ More than a dozen monographs published around the world (in the last four decades) discuss the status of contemporary special forces in individual states, including those of the North Atlantic Treaty Organisation, but do not put them in a comparative context (See [in chronological order] Walmer, 1984; Quarrie, 1990; Katz, 1995; Sullivan, 1995; Miller, 1999; Forty, 2002; Bennett, 2003; Ryan, Mann, Stilwell, 2003; McManners, 2003; Miller, 2004; Ryan, 2008; Naumov, 2011; Chant, 2012; Balenko, 2014; Sünkler, 2019; Gut, 2019; Neville, 2020).

Operations Command History (1987–2007), 2007; Clancy, Stiner, Koltz, 2002; Bieniek, 2016).

The system, within which USSOCOM performed both the role of an operational command and a broadly defined training and supply entity, allowed not only for the unification of standards for the use and equipment of individual MSF formations (taking into account the specifics of the operations of specific units), but – above all – allowed for their smooth functional-organisational and rapid temporal takeover by the integrated command for the duration of the required operation. At the same time, it should be emphasised that the commander of each of the mentioned types of armed forces had the possibility to use subordinate special forces formations – for operations in support of his own forces in the event of the outbreak of classical warfare – directly (without subordinating them to USSOCOM), but for the purposes of operations in which formations subordinate to at least two types of armed forces were to participate – the command was taken over by USSOCOM (Bieniek, 2016).

Three weeks earlier, an analogous MSOF management model had been adopted in the UK. At the end of March 1987, the *United Kingdom Special Forces Directorate* was established, headed by the *Director Special Forces*, who was also the commander of the *Special Air Service* (SAS). In addition to this unit – which was administratively subordinate to the *British Army*, an analogous unit – but subordinate to the *Royal Navy* – was also placed under its operational control (Rogers, 2016).

The third country to replicate this dual subordination scheme was France, but it was introduced formally after the end of the Cold War, under the influence of lessons learned from the so-called first Gulf War. A separate Special Operations Command (*le Commandement des opérations spéciales* – COS) was established there on 24 June 1992, and its operationally subordinate units were still administratively part of all three types of French armed forces: The Land Forces (*Armée de terre*), the Air Force (*Armée de l'Air*) and the Navy (*Marine nationale*) (Le Pautremat, 2009).

The above-described model of dual subordination developed in these three countries also became a model adopted by the vast majority of other NATO countries (including, among others, Italy, Turkey and the Netherlands) over the following three decades.

3. THE WAR ON TERROR AS AN IMPETUS FOR TRANSFORMATION

It should be noted that at the time of the initiation of the process of separating the special forces in 1987, the Cold War was still in progress and – although WOOS formations had already been used previously for counter-terrorist operations (e.g. in May 1980. – As part of 'Operation Nimrod', for example, the British SAS freed all the hostages imprisoned in the Iranian embassy in London, and at the same time liquidated 5 out of 6 terrorists) (See further: Fremont-Barnes, 2009), their basic function was to carry out – in peacetime, crisis and wartime – the classically understood so-called direct actions (Direct Actions) and special reconnaissance against the structures of (potentially) hostile states (especially the Warsaw Pact), and in particular their armed forces (usually inland or at the back of the front line) (Smith, 2006; Neville, 2020; MacKenzie, 2011; Aldrich, 2012). A typical example of this was the participation of US and British MSOF formations in operations: „Just Cause” (the invasion of Panama in December 1989, in which *U.S. Delta Force* and *Navy SEALs*, among others, were to play a crucial role, but their plan to stop Gen. Manuel Noriega failed) (Neville, 2020; Yates, 2014) and „Desert Storm” (the liberation of Kuwait and the invasion of southern Iraq in January and February 1991, where, notably, both *Delta*

Force and *SAS* participated in the operation to detect, guide and dismantle Iraqi surface-to-surface missile launchers launched against targets in Saudi Arabia and Israel, while *Navy SEALs* in sub-operation „Ave Maria” disinfomed the enemy by simulating preparations for a naval landing on the Kuwaiti coast) (Denécé, 2007; A. Landau, F. Landau, Griswold, Giongreco, Holberstadt, 1999; Crawford, 1998).

From 1992 onwards – after the dismantling of the Warsaw Pact and the subsequent collapse of the Soviet Union, in a wave of mythical belief in a Fukuyama-esque, final 'end of history' – Western MSOF formations began to be used to secure peacekeeping operations carried out under the aegis of the United Nations (in the former Yugoslavia, Somalia and Haiti) (Leebaert, 2010; Denécé, 2007; Neville, 2020; Burnett, 2003; MacKenzie, 2011), as well as for quasi-police tasks, such as apprehending Serbian and Croatian war criminals (in the framework of Operation Green Light, carried out at the request of the International Tribunal for Crimes in the former Yugoslavia) (Denécé, 2007; Neville, 2020; B. Burnett, 2003; A. MacKenzie, 2011), or finding 'drug barons' (e.g. Medellin cartel boss Pablo Escobar) (Burnett, 2003; Neville, 2020).

The attacks on the World Trade Center and the Pentagon on 11 September 2001 and the subsequent war on terror were a catalyst for dynamising changes in the structures of the armed forces of NATO states. Indeed, the counter-terrorism paradigm adopted at the time was based on close interaction between three components: special services (civilian and military), police formations, as well as civilian (usually operating within the police) and special forces (military and non-military) (See, for example: *The United Kingdom's Strategy for Countering Terrorism...*, 2018; Omand, 2005). As a result – with military expenditure declining across the board – personnel were strengthened and the process of organisational separation of the MSF continued at the expense of reducing the potential of armoured and mechanised units. While in 14 years – from 1987 to 2001 – only four countries in the alliance (the United States, the United Kingdom, France and Turkey) led to their separation into an independent type of military, another four (Italy, Canada, Poland and Lithuania) adopted an identical or similar model in just seven years (2001-2008).

4. THE POLISH OPTION OF FULL (UNIFIED) SUBORDINATION FOR THE EASTERN FLANK STATES

On 24 May 2007, Special Forces Command (*Dowództwo Wojsk Specjalnych – DWS*) (Frącik, 2020; Wiśniewski, 2014) was established in Poland, and thus our country became the seventh North Atlantic Treaty Organisation country to have separate Special Forces within the general structure of the armed forces. However, in the Polish Army it was decided to make more radical changes with regard to the increasing importance of the units in question, and instead of the option of dual subordination, the option of full (unified) operational and administrative subordination within a newly created separate branch of armed forces, rather than – as in the case of the United States, the United Kingdom or France – only a separate type of troops (Patalong, 2016; Kręcikij, 2016; Wiśniewski, 2014). The main motivation for this decision appears to have been the location on NATO's eastern flank (on the interface with potentially antagonistic OUBZ states) and, as a consequence, the need to limit as much as possible the time to decide which units were to be subordinated to a separate special forces operational command at any given time. A similar model has been adopted in other countries on NATO's eastern flank, including the armed forces of Lithuania, Slovakia and Hungary.

The situation changed on 1 January 2014 when, following the winding up of DWS, two bodies were created in its place:

- 1) Inspectorate of Special Forces (*Inspektorat Wojsk Specjalnych – IWS*), subordinated to the General Command of the Armed Forces (*Dowództwo Generalne Rodzajów Sił Zbrojnych – DGRSZ*);
- 2) Special Forces Command (*Dowództwo Sił Specjalnych – DSS*), also subordinated to DGRSZ, and then – from 10 January, after its renaming to Special Operations Centre- Special Forces Component Command (*Centrum Operacji Specjalnych – Dowództwo Komponentu Wojsk Specjalnych – COS-DKWS*) – subordinate to Operational Command of the Armed Forces (*Dowództwo Operacyjne Rodzajów Sił Zbrojnych – DORSZ*) (Jakubowski, 2014; Kręcikij, 2016; Frącik, 2020; Otwinowski, 2017).

In addition, on 17 July 2015, the Special Operations Centre–Special Forces Component Command was again subordinated to the DGRSZ and then – on 3 August 2015 – was also split into two bodies:

- Special Forces Component Command (*Dowództwo Komponentu Wojsk Specjalnych – DKSW*), subordinate to the DGRSZ;
- Special Operations Centre (*Centrum Operacji Specjalnych – COS*), subordinate to DORSZ (Frącik, 2020; Kręcikij, 2016; Otwinowski, 2017; K. Styburski, 2020).

As a result, there was a return to the model that functioned in the years 2007–2013 (albeit now within the framework of the DGRSZ and DORSZ), as the sole disposer of the special forces remains the DKSW, while the COS and the IWS did not have any causal powers in this respect (Kręcikij, 2016).

Thus, although from January 2014 to August 2015 the military special forces – despite their subordination to several duplicating command bodies – retained their status as a separate branch of armed forces (Frącik, 2020; *Dowództwo Komponentu Wojsk...*), the series of as many as four aforementioned changes made in the space of a year and a half – and implemented in mutually contradictory directions – should be assessed extremely critically, as this indicates that in all likelihood – at least their first phase – was not, prior to its implementation, thoroughly analysed⁴. In contrast, a rational reorganisation was undoubtedly served by the merger (or rather absorption by DKSW) on 1 January 2018 of IWS with DKSW (Kowalska-Sendek, 2018; Frącik, 2020).

5. CONCLUSIONS

The only NATO countries that started the process of structurally separating military special forces back in the final period of the Cold War were the United States and the United Kingdom (1987), and by the end of the twentieth century the process had only included: France (1992) and Turkey (1994). In the first decade of the 21st century they were joined by: Italy (2004), Canada (2006), Poland (2007) and Lithuania (2008), and in the next decade: Norway, Estonia, Denmark (all in 2014), the Czech Republic, Croatia (both in 2015), Latvia (2017), the Netherlands (2018), Hungary, Slovakia and Bulgaria (all three in 2019). By January 2020, MSF commands in the rank of separate branch of armed forces or troops had thus become operational in 18 of the then 29 North Atlantic Treaty

⁴ Fully sharing Janusz Kręcikij's and Filip Jakubowski's critical opinions on the aforementioned reforms, it seems that one should reflect on the sense of functioning of the COS, especially after the loss of any causal powers.

Organisation states (not counting North Macedonia, which only became a NATO member on 27 March 2020). They accounted for up to almost 5% of the manpower of their total armed forces, with the smallest share being just 0.4% in the case of Belgium and the largest share as high as 4.6% in the case of the United States). In Poland, the share was quite significant at around 3.3%, while in other large NATO countries it was smaller (e.g. in the UK it was 2.0%, in France 1.5% and in Canada 2.2%).

In the remaining seven countries of the alliance, special forces did not constitute a separate branch of armed forces or troops, but functioned within the structures of the land army or navy (Belgium, Greece, Spain, Germany, Portugal, Romania and Slovenia), and four did not have this type of formation at all (Albania, Montenegro, Luxembourg and – with no armed forces of its own at all – Iceland).

REFERENCES

5. *pluk špeciálneho určenia: Od soboty slovenské Sily pre špeciálne operácie na novej platforme* [Access: 21.09.2021]. Access on the internet: <https://www.mil.sk/85597/?pg=1>.
- Aldrich, R. (2012). *Waiting to Be Kissed? NATO, NORTHAG and Intelligence* [In:] Hoffenaar, J., Krüge, J.D., Zabecki, D., ed., *Blueprints for Battle. Planning for War in Central Europe 1948-68*. Lexington: University Press of Kentucky
- Allied Joint Doctrine for Special Operations*, AJP-5, North Atlantic Treaty Organization, June 2013.
- A Magyar Honvédség Parancsnoksága: *Haderőnemi Szemléltetés (különleges műveleti)*, [Access: 30.09.2021]. Access on the internet: <https://honvedelem.hu/a-magyar-honvedseg-parancsnoksaga.html>.
- Balenko, S. (2014). *Vsemirnaya entsiklopediya spetsnaza. Elitnyye podrazdeleniya 100 stran [Worldwide encyclopaedia of special for ces. Special subdivisions of 100 countries]*. Moskva: Eksmo.
- Bennett, R. (2003). *Elite Forces. An Encyclopedia of the World's Most Formidable Secret Armies*. London: Virgin Books.
- Bianet: *Özel Kuvvetler Komutanlığı Nedir?* 28.12.2009 [Access: 21.09.2021]. Access on the internet: <https://m.bianet.org/bianet/insan-haklari/119150-ozel-kuvvetler-komutanligi-nedir>.
- Bieniek, M. (2016). *Sily specjalne - rola i zadania oraz system dowodzenia nimi [Special Forces – role and tasks and the system of commanding them]* [In:] Bieniek, M., Mazur, S., ed., *Wojska Specjalne Rzeczypospolitej Polskiej [Special Forces of the Republic of Poland]*. Kraków: Krakowska Akademia im. A. Frycza-Modrzewskiego.
- Buczyński, J. (2011). *Teoria bezpieczeństwa: procedury i metody badawcze [Security theory: procedures and research methods]*. „Przegląd Naukowo-Metodyczny. Edukacja dla Bezpieczeństwa”, No. 2.
- Bundeswehr: *KSK-Elitesoldat als Islamist enttarnt*, „Der Spiegel” 18.06.2020 [Access: 21.09.2021]. Access on the internet: <https://www.spiegel.de/politik/deutschland/bundeswehr-ksk-elitesoldat-als-islamist-enttarnt-a-74a2a501-29b0-46e8-9e01-6fd619fe8377>.
- Burnett, B. (2003). *Delta Force. Counterterrorism Unit of the U.S. Army*, New York: Rosen Publ.
- Bushman, J.M. (2010). *Standing Joint Task Forces. Resourcing Relics*. Fort Leavenworth: School of Advanced Military Studies United States Army Command and General Staff College.

- Chant, C. (2012). *Special Forces. History, Roles and Missions, Training, Weapons and Equipment, Combat Scenarios*. Bath: Parragon Books.
- Clancy, T., Stiner, C., Koltz, T. (2002). *Wojownicy cienia [Warriors of the Shadow]*. Warszawa: Amber.
- Crawford, S. (1998). *SAS Encyclopedia. Definitive Companion to World's Crack Regiment*. Miami: Lewis Int.
- Denécé, E. (2009). *Historia oddziałów specjalnych [History of special forces]*. Warszawa: Bellona.
- DoD Dictionary of Military and Associated Terms, Department of Defense, November, 21st 2021.
- Dowództwo Komponentu Wojsk Specjalnych: *Zadania* [Access: 17.09.2021]. Access on the internet: <https://dkws.wp.mil.pl/pl/pages/zadania-2017-01-16-4/>.
- Eesti Kaitsevägi: *Erioperatsioonide väejuhatus* [Access: 19.09.2021]. Access on the internet: <https://mil.ee/uksused/eriperatsioonide-vaehuatus/>.
- Fraćik, K. (2020). *Wojska Specjalne Sił Zbrojnych Rzeczypospolitej Polskiej w obliczu transformacji ustrojowej [Special Forces of the Polish Armed Forces in the Face of Political Transformation]*. „Bezpieczeństwo. Teoria i praktyka”, No. 2 (XXXIX).
- Forsvaret: *Forsvarets Spesialkommando* [Access: 21.09.2021]. Access on the internet: <https://www.forsvaret.no/om-forsvaret/organisasjon/forsvarets-spesialstyrker/forsvarets-spesialkommando-fsk>.
- Forsvaret: *Specialoperationskommandoen* [Access: 19.09.2021]. Access on the internet: <https://forsvaret.dk/da/organisation/sokom/>.
- Fremont-Barnes, G. (2009). *Who Dares Wins. The SAS and the Iranian Embassy Siege 1980*. Oxford: Osprey Publ.
- Fredriksen, J.C. (2012). *Fighting Elites. A History of U.S. Special Forces*. Santa Barbara: ABL-CLIO.
- Fredslund M. (2015). *Nogle få blandt de få*. „InterForce medlemsmagasin”, No. 1 [Access: 19.09.2021]. Access on the internet: http://www.interforce.dk/app/uploads/2020/02/1501-215212_interforce_magasin_0115_N.pdf.
- Government of Canada – Department National Defence: *Canadian Special Operations Forces Command* [Access: 21.09.2021]. Access on the internet: <https://www.canada.ca/en/special-operations-forces-command.html>.
- Gut, J. (2019). *Siły specjalne wybranych państw: Wielka Brytania, Stany Zjednoczone, Niemcy, Federacja Rosyjska [Special forces of selected countries: United Kingdom, United States, Germany, Russian Federation]*. Warszawa: Difin.
- IHS Jane's Sentinel Country Risk Assessments. *Central Europe and the Baltic States 2013*, Issue Thirty-Two. IHS Jane's, Coulsdon 2013.
- Jagodźński, B. (2020). *Działania i rozwój jednostek specjalnych [Activities and development of special units]*. „Przegląd Bezpieczeństwa Wewnętrznego”, No. 22(12).
- Jakubowski, F. (2014). *Reforma dowodzenia Wojsk Specjalnych [Reform of the command of Special Forces]*. „Obronność. Zeszyty Naukowe”, No. 1(9).
- Jane's World Armies 2020*, Issue 47 (ed. D. Lee Lehrke), IHS Markit, Coulsdon (June) 2020.
- Jutarnji List: K. Žabec, *Skupnik Josip Briški bio je član najelitnije postrojbe HV-a prošao je nemilosrdnu 'obuku ratnika' kakvu uspije završiti 300 najizdržljivijih*, 26.07.2019 [Access: 19.09.2020]. Access on the internet: <https://www.jutarnji.hr/vijesti/hrvatska/skupnik-josip-briski-bio-je-clan-najelitnije-postrojbe-hv-a-prosao-je-nemilosrdnu-obuku-ratnika-kakvu-usprije-završiti-300-najizdržljivijih-9169700>.

- Капитал*: М. Милев, *Генерали срещу командоси. Българската армия е на кръстопът как да развие своите специални части*, 9.08.2014 [Access: 17.09.2021]. Access on the internet: https://www.capital.bg/politika_i_ikonomika/bulgaria/2014/08/09/2358667_generali_sreshtu_komandosi/.
- Katz, S. (1995). *The Illustrated Guide to the World's Top Counter Terrorist Forces*. Hongkong: Concord Publ.
- Kowalska-Sendek M., *Zmiany u specjalsów. „Polska Zbrojna”* from 5 Jan. 2018 [Access: 21.09.2021]. Access on the internet: <http://www.polska-zbrojna.pl/home/articleshow/24454?t=Zmiany-u-specjalsow>.
- Kręcikij, J. (2016). *Organizacja dowodzenia Wojsk Specjalnych Sił Zbrojnych Rzeczypospolitej Polskiej – od normalności do nieudanych eksperymentów [Organisation of the command of the Special Forces of the Polish Armed Forces from normality to failed experiments]. „Bezpieczeństwo. Teoria i Praktyka”, No. 3 (XXIV)*.
- Landau, A., Landau, F., Griswold, T., Giongreco, D., Holberstadt, H. (1999). *U.S. Special Forces. Airborne Rangers. Delta & U.S. Navy SEALs*. Osceola: MBI Publ.
- Leebaert, D. (2010). *Zuchwali zdobywcy. Historia oddziałów specjalnych i tajnych operacji od Achillesa do Al-Kaidy [Bold Conquerors. A history of special forces and covert operations from Achilles to al-Qaeda]*. Warszawa: Jeden Świat Publ.
- Le Pautremat, P. (2009) *Les guerriers de la république: forces spéciales et services secrets français 1970–2009*. Paris: Choiseul.
- Lietuvos kariuomenė: *Specialiųjų operacijų pajėgos-Struktūra* [Access: 21.09.2021]. Access on the internet: <https://www.kariuomene.lt/pajegos-ir-kariniai-vienetai/specialiuju-operaciju-pajegos/stuktura/23245>.
- MacKenzie, A. (2011). *Special Force. The Untold Story of 22nd Special Air Service Regiment (SAS)*. London: I.B. Tauris.
- Marinestützpunkt in Eckernförde: *Kampfschwimmer sind weltweit meist geheim unterwegs. „Hannoversche Allgemeine Zeitung”, 15.01.2020* [Access: 21.09.2021]. Access on the internet: <https://www.haz.de/Nachrichten/Der-Norden/Marinestuetzpunkt-in-Eckernfoerde-Kampfschwimmer-sind-weltweit-meist-geheim-unterwegs>.
- McManners, H. (2003). *Ultimate Special Forces*. New York: DK Publishing.
- Miller, D. (1999). *Special Forces. The Men, the Weapons and the Operations*. London: Salamander Books.
- Miller, D. (2004). *The Illustrated Directory of Special Forces*. London: Greenwich Editions.
- Ministerie van Defensie: *Special Operations Command* [Access: 21.09.2021]. Access on the internet: <https://www.defensie.nl/organisatie/bestuursstaf/eenheden/socom>.
- Ministerio de Defensa-Ejército de Tierra: *Mando de Operaciones Especiales* [Access: 21.09.2021]. Access on the internet: https://ejercito.defensa.gob.es/unidades/Alicante/cg_moe/Organizacion/index.html.
- Ministerio de Defensa-Infantería de Marina: *Fuerza de Guerra Naval Especial (FGNE)*, [Access: 21.09.2021]. Access on the internet: <https://armada.defensa.gob.es/ArmadaPortal/page/Portal/ArmadaEspañola/buquesinfanteria/prefLang-es/03fuerza-guerra-naval-especial-fgne>.
- Ministero Della Difesa: *Comando Interforze per le Operazioni delle Forze Speciali (COFS)* [Access: 30.09.2021]. Access on the internet: https://www.difesa.it/SMD_/COFS/Pagine/default.aspx.

- Nacionālie bruņotie spēki- Sastāvs [Access: 21.09.2021]. Access on the internet: <https://www.mil.lv/en/node/635>.
- Naumov, J. (2011). *Entsiklopediya spetsnaza stran mira [Encyclopaedia of the special forces of the World]*. Belgorod: OOO Knizhnyy Klub.
- Neville, L. (2020). *Elita. Współczesne siły specjalne od A do Z [Elite. Contemporary Special Forces from A to Z]*. Warszawa: Bellona.
- Omand, D. (2005). *Countering International Terrorism. The Use of Strategy*. „Survival”, Vol. 47, No. 4 (Winter).
- Otwinowski, W. (2017). *Wojsko Polskie w systemie bezpieczeństwa Rzeczypospolitej Polskiej w okresie transformacji [The Polish Armed Forces in the security system of the Republic of Poland during the period of transformation]*. Poznań: Wydawnictwo Wyższej Szkoły Bezpieczeństwa.
- Patalong P. (2016). *Rola i miejsce Wojsk Specjalnych w systemie bezpieczeństwa państwa [The role and place of Special Forces in the state security system]* [In:] Bieniek, M., Mazur, S, ed., *Wojska Specjalne Rzeczypospolitej Polskiej [Special Forces of the Republic of Poland]*. Kraków: Krakowska Akademia im. A. Frycza-Modrzewskiego.
- Παρουσίαση Σχηματισμών της Ι ΜΠ, „Ι Μεραρχία Πεζικού” [Access: 21.09.2021]. Access on the internet: http://army.gr/sites/default/files/mag_20143301.pdf.
- Πολιτικό Ναυτικό-Αρχική [Access: 21.09.2021]. Access on the internet: <https://www.hellenicnavy.gr/el/organosi/arxigeio-stolou/ypagomenes-dioikiseis/dioikisi-ypovyxion-katastrofon.html>.
- Poveljstvo sil Slovenske vojske: *Enota za specialno delovanje* [Access: 21.09.2021]. Access on the internet: <https://www.slovenskavojska.si/o-vojski/obseg-in-struktura/poveljstvo-sil/enota-za-specialno-delovanje/>.
- Quarrie, B. (1990). *Special Forces*. London: The Apple Press.
- Ředitelství speciálních sil [Access: 19.09.2020]. Access on the internet: http://www.respecs.cz/kdo_jsme/kdo_jsme.html.
- Rogers, P. (2016). *UK Special Forces. Accountability in Shadow War*. Oxford: Oxford Research Group.
- Ryan, M., Mann, C., Stilwell, A. (2003). *The Encyclopedia of the World's Special Forces. Tactics, History, Strategy, Weapons*. New York: Barnes & Noble Books.
- Ryan, M. (2008). *The Operators. Inside the World's Special Forces*. New York: Skyhorse Publ.
- Forty, G. (2002). *The Vital Guide to Special Forces*, Shrewsbury: Airline Publ.
- Sullivan, G. (1995). *Elite Warriors. The Special Forces of the United States and Its Allies*. New York: Facts On File.
- Stücker, S. (2019). *NATO Special Forces. 70 Jahre NATO-Spezialkräfte heute*, Berlin: S. Ka.-Verlag.
- Słownik terminów z zakresu bezpieczeństwa narodowego (2008) [Dictionary of National Security Terms] (wyd. 6). Warszawa: AON.
- Smith, M. (2006). *Killer Elite. Inside Story of America's Most Secret Special Operations Team*. London: Cassell.
- Special Forces Group (Belgium): *Word from the Commander* [Access: 17.09.2021]. Access on the internet: <https://www.sfg.be/word-from-the-commander/>.
- Špeciálne jednotky Slovenskej republiky: *5. pluk špeciálneho určenia* [Access: 21.09.2021]. Access on the internet: <https://www.specialunits.sk/5-pluk-specialneho-urcenia/>

- Styburski, K. (2020). *Operacje specjalne. Polski model i nie tylko [Special Operations. The Polish model and Beyond]*. Brzezina Łąka: Wydawnictwo Poligraf.
- The Military Balance 2020*. International Institute for Strategic Studies-Routledge. London.
- The United Kingdom's Strategy for Countering Terrorism. Presented to Parliament by the Secretary of State for the Home Department by Command of Her Majesty*, HM Government, June 2018.
- United States Special Operations Command History (1987–2007)*, 2007. USSOCOM, MacDill.
- Walmer, M. (1984). *An Illustrated Guide to Modern Elite Forces. The Weapons, uniforms, tactics and operations of the world's toughest troops*. London: Salamander Books.
- Williamson, J. (2020). *Operation „Eagle Claw” 1980. The Disastrous Bid to End the Iran Hostage Crisis*. Oxford-New York: Osprey Publ.
- Wiśniewski, R. (2014). *Rola Wojsk Specjalnych w systemie obronnym RP [The role of Special Forces in the Polish defence system]*. „Przegląd Strategiczny”, No. 7.
- Yates, L. (2014). *The U.S. Military Intervention in Panama: Operation Just Cause December 1989 – January 1990*. Washington D.C.: Center of Military History United States Army.

ATTACHMENT

Table 1. Organizational status and manpower of Special Forces of the armed forces of NATO countries in January 2020

NATO countries	MSF as separate branch of armed forces or troops	Date of establishment Separatek operational command of MSF	Total manpower of the armed forces (officers and soldiers in active duty)	Total manpower of the MSF (officers and soldiers in active duty)	Share of MFS in the manpower of of the armed forces (%)
Albania	not	→ not created	8 000	0	0
Belgium ¹	not	→ not created	26 300	~ 115	0,4
Bulgaria	yes	October 2019	33 450	~1 500 ²	4,5
Canada	yes	13th August 2006	67 400	1 500 ³	2,2
Croatia	yes	February 2015	15 200	300 ⁴	2,0
Czech Republic	yes	1st January 2015	21 750	b.d. ⁵	b.d.
Denmark	yes	1st September 2014	14 500	250 ⁶	1,7
Estonia	yes	1st August 2014	6 700	b.d. ⁷	b.d.
France	yes	24th June 1992	203 750	3 150 ⁸	1,5
Germany ⁹	not	→ not created	181 400	~1 500	0,8
Greece ¹⁰	not	→ not created	143 850	b.d.	b.d.
Hungary	yes	1st January 2019	27 800	b.d. ¹¹	b.d.
Iceland	lack of armed forces				
Italy	yes	1st December 2004	165 500	b.d. ¹²	b.d.
Latvia	yes	7th August 2017	6 400	b.d. ¹³	b.d.
Lithuania	yes	3rd April 2008	20 650	b.d. ¹⁴	b.d.
Luxembourg	not	→ not created	900	0	0
Montenegro	not	→ not created	2 350	0	0
Netherlands	yes	5th December 2018	35 400	b.d. ¹⁵	b.d.
Norway	yes	1st January 2014	23 250	b.d. ¹⁶	b.d.
Poland	yes	24th May 2007	104 900 ¹⁷	3 500 ¹⁸	3,3
Portugal ¹⁹	not	→ not created	27 250	b.d.	b.d.
Romania ²⁰	not	→ not created	69 600	b.d.	b.d.
Slovakia	yes	1st June 2019	15 850	b.d. ²¹	b.d.
Slovenia ²²	not	→ not created	7 250	b.d.	b.d.
Spain ²³	not	→ not created	120 350	b.d.	b.d.
Turkey	yes	1994	355 200	b.d. ²⁴	b.d.
United States	yes	16th April 1987	1 379 800	63 150 ²⁵	4,6
United Kingdom	yes	March 1987	148 450	~3 000 ²⁶	2,0

¹ Despite the lack of the creation of a separate command covering MFS, there is a Special Forces Group (SF Gp) within the structure of the Belgian so-called Land Forces Component, which has been part of the Special Operations Regiment since 2018. According to the 2008 recruitment plans, the target size of the unit was to reach 115 personnel.

² Included here are subordinate units under the – operational since October 2019 – Combined Special Operations Command (*Съвместно командване на специалните операции*), established on the basis of the 68th Special Forces Brigade (*68-а бригада "Специални сили"*), with a strength of approximately 1,500 soldiers in 2014.

³ Included here – in operation since 13 August 2006 – *Canadian Special Operations Forces Command* (CSOFC).

- ⁴ Included here, established at the beginning of February 2015, is the Special Forces Command (*Zapovjedništvo specijalnih snaga – ZSS*) with two special forces groups.
- ⁵ Included here – established on 1 January 2015. – Special Forces Board (*Ředitelství speciálních sil*), with the 601st Special Forces Group (*601. skupina speciálních sil*) subordinate to it.
- ⁶ Included here – operational on 1 September 2014 – Special Operations Command (*Specialoperationskommandoen – SOKOM*) with three subordinate special units: *Jægerkorpset* (comprising approximately 150 officers and soldiers), the marine task force *Frømandskorpset* (approximately 30-50 officers and soldiers) and the Arctic sub-unit *Siriuspatruljen* operating mainly in Greenland (approximately 12-20 officers and soldiers).
- ⁷ Included here – established on 1 August 2014 – Special Operations Command (*Erioperatsioonide väejuhatuse – ESTSOF*) with its subordinate Special Operations Group (*Erioperatsioonide grupp – EOG*).
- ⁸ Included here are the MFS operationally subordinate to – created on 24 June 1992 – Special Operations Command (*le Commandement des opérations spéciales – COS*), but administratively part of: Land Forces (with a personnel strength of about 2,200 officers and soldiers), Air Force (about 400 officers and soldiers) and Navy (about 550 officers and soldiers), making a total of about 3,150 officers and soldiers.
- ⁹ German MFS operate only in the ground forces within the so-called Rapid Reaction Division (*Division Schnelle Kräfte – DSK*) as the Special Forces Command (*Kommando Spezialkräfte – DSK*) with a subordinate of 1,400 officers and soldiers, as well as in the navy as the Naval Special Forces Command (*Kommando Spezialkräfte der Marine – KSM*) with less than 100 officers and soldiers.
- ¹⁰ The Greek MFS only operates within the structure of the land forces there, as part of the so-called 1st Infantry Division "Smyrni" (*1 Μεραρχία Πεζικού "ΣΜΥΡΝΗ"*) and within the navy as the Submarine Strike Command (*Διοίκηση Υποβρυχίων Καταστροφών – ΔΥΚ*).
- ¹¹ Included here – established on 1 January 2019 – Reconnaissance Inspectorate [Special Operations Command] (*Haderőnemi Szemlélőség [különleges műveleti]*) with its subordinate 2nd Special Purpose Brigade (*2. Különleges Rendeltetésű Dandár*).
- ¹² Included here – established on 1 December 2004 – Combined Special Forces Operations Command (*Comando Interforze per le Operazioni delle Forze Speciali – COFS*).
- ¹³ Included here – established on 7 August 2017 – Special Operations Command (*Speciālo operāciju pavēlniecība*).
- ¹⁴ Included here is the – established on 3 April 2008 – Special Operations Forces (*Specialiųjų operacijų pajėgos – SOP*).
- ¹⁵ Included here – established on 5 December 2018 – The so-called Dutch Special Operations Command (*Netherlands Special Operations Command – NLD SOCOM*).
- ¹⁶ Included here – in operation since 1 January 2014 – Armed Forces Special Forces (*Forsvarets spesialstyrker – FS*) with its subordinate three special forces groups (land, naval and women's) and a helicopter unit.
- ¹⁷ Together with an additional 18,500 officers and soldiers of the Territorial Defence Forces (*Wojska Obrony Terytorialnej – WOT*) serving part-time or with the possibility of their rapid mobilisation, the Polish Armed Forces in January 2020 will have a total of 123,400 officers and soldiers.
- ¹⁸ Included here – created on 24 May 2007 – Special Troops (*Wojska Specjalne – WS*), comprising – in addition to *JW 2305 'Grom'* (consisting of approximately 270 officers and soldiers) – also two other combat groups (*JW 4026 Formosa* and *JW 4101 Komandosów*), two auxiliary groups and a helicopter unit – a total of approximately 3,500 officers and soldiers.
- ¹⁹ Despite the lack of a separate MFS command, there is a so-called Special Operations Force (*Força de Operações Especiais – FOE*) within the structure of the Portuguese land forces, and a Special Tasks Branch (*Destacamento de Acções Especiais – DAE*) within the navy.
- ²⁰ Romanian MFS operate only in the ground forces there as part of the 6th Special Operations Brigade "Mihai Viteazul" (*Brigada 6 Operații Speciale 'Mihai Viteazul'*), comprising four battalions.
- ²¹ Included here is the operational – established on 1 June 2019 – Special Operations Command (*Veliteľstvo Síľ pre špeciálne operácie – VeŠŠO*) with the 5th Special Purpose Regiment (*5. pluk špeciálneho určenia*) and the 23rd Mechanised Battalion (*23. motorizovaný prápor*) subordinate to it and comprising approximately 450 soldiers.
- ²² Despite the lack of a separate MFS command, there is a Special Operations Unit (*Enota za specialno delovanje*) within the structure of the ground forces.

- ²³ Despite the lack of the creation of a separate command covering MFS, within the structure of the Spanish land forces there is a Special Operations Command (*Mando de Operaciones Especiales*) with six such units reporting to it, while within the structure of the navy infantry there is a Naval Special Forces (*Fuerza de Guerra Naval Especial* – FGNE) with two subordinate units.
- ²⁴ Included here – established in 1994 – Special Forces Command (*Özel Kuvvetler Komutanlığı*).
- ²⁵ Included here are MFS operationally subordinate to – established on 16 April 1987 – U.S. *Special Operations Command* (USSOCOM), but administratively part of: U.S. Army (*Army Special Operations Command* – USASOC) with approximately 34,100 officers and soldiers, USAF (*Air Force Special Operations Command* – AFSOC) with approximately 16,200 officers and soldiers, U.S. Navy (*Naval Special Warfare Command* – NAVSPECWARCOM) comprising approximately 9,850 officers and soldiers, and U.S. Marine Corps (*Marine Forces Special Operations Command* – MARSOC) with approximately 3,000 officers and soldiers, making a total of approximately 63,150 officers and soldiers.
- ²⁶ Included here are MFS operationally subordinate to – operational since March 1987 – *United Kingdom Special Forces Directorate* (UKSF), but administratively part of: the British Army (*Special Air Service* – SAS and *Special Reconnaissance Regiment*), the Royal Air Force (*47th Squadron*), the Royal Navy (*Special Boat Service* – SBS), and in addition also administratively subordinate to the UKSF the *Joint Subordinate Units* (*Joint Special Forces Aviation Wing*, *Special Reconnaissance Regiment*, *18th Signal Regiment* and *Special Forces Support Group*), giving (as of 2016) a total of approximately 3,000 officers and soldiers (excluding reserve forces).

Sources: own elaboration based on: *The Military Balance 2020*, International Institute for Strategic Studies-Routledge, London 2020, p. 43 ff.; *Jane's World Armies 2020*, Issue 47, (ed. D. Lee Lehrke), IHS Markit, Coudson (June) 2020, p. 8 ff.; L. Neville, *Elita. Współczesne siły specjalne od A do Z*, Bellona, Warszawa 2020, p. 18 ff.; Special Forces Group (Belgium): *Word from the Commander*, <https://www.sfg.be/word-from-the-commander/> (access: 17.09.2021); Капитал: М. Милев, *Генерали срещу командоси. Българската армия е на кръстопът как да развива своите специални части*, 9.08.2014, https://www.capital.bg/politika_i_ikonomika/bulgaria/2014/08/09/2358667_generali_sreshtu_komandosi [Access: 17.09.2021]; Government of Canada-Department National Defence: *Canadian Special Operations Forces Command*, <https://www.canada.ca/en/special-operations-forces-command.html> [Access: 21.09.2021]; JutarnjiList: K. Žabec, *Skupnik Josip Briški bio je član najelitnije postrojbe HV-a prošao je nemilosrdnu 'obuku ratnika' kakvu uspije završiti 300 najizdržljivijih*, 26.07.2019 <https://www.jutarnji.hr/vijesti/hrvatska/skupnik-josip-briski-bio-je-clan-najelitnije-postrojbe-hv-a-prosao-je-nemilosrdnu-obuku-ratnika-kakvu-usprije-završiti-300-najizdržljivijih-9169700> [Access: 19.09.2020]; Ředitelství speciálních sil, http://www.respecs.cz/kdo_jsme/kdo_jsme.html [Access: 19.09.2021]; Forsvaret: *Specialoperationskommandoen*, <https://forsvaret.dk/da/organisation/sokom/> [Access: 19.09.2021]; M. Fredslund, *Nogle få blandt de få*, „InterForce medlemsmagasin”, 2015, No. 1, p. 7, http://www.interforce.dk/app/uploads/2020/02/1501-215212_interforce_magasin_0115_N.pdf [Access: 19.09.2021]; Eesti Kaitsevägi: *Erioperatsioonide väejuhatas*, <https://mil.ee/uksused/erioperatsioonide-vaehuatus/> [Access: 19.09.2021]; P. Le Pautremat, *Les guerriers de la république: forces spéciales et services secrets français 1970–2009*, Choiseul, Paris 2009, p. 31; Bundeswehr: *KSK-Elitesoldat als Islamist enttarnt*, „Der Spiegel” 18.06.2020, <https://www.spiegel.de/politik/deutschland/bundeswehr-ksk-elitesoldat-als-islamist-enttarnt-a-74a2a501-29b0-46e8-9e01-6fd619fe8377> [Access: 21.09.2021]; Marinestützpunkt in Eckernförde: *Kampfschwimmer sind weltweit meist geheim unterwegs*, „Hannoversche Allgemeine Zeitung” 15.01.2020, <https://www.haz.de/Nachrichten/Der-Norden/Marinestuetzpunkt-in-Eckernfoerde-Kampfschwimmer-sind-weltweit-meist-geheim-unterwegs> [Access: 21.09.2021]; *Παρουσίαση Σχηματισμών της Ι ΜΠ*, „Ι Μεραρχία Πεζικού”, p. 35, http://army.gr/sites/default/files/mag_20143301.pdf [Access: 21.09.2021]; Πολιμικό Ναυτικό-Αρχική, <https://www.hellenicnavy.gr/el/organosi/arxigeio-stolou/ypagomenes-dioikiseis/dioikisi-ypovryxion-katastrofon.html> [Access: 21.09.2021]; A Magyar Honvédség Parancsnoksága: *Haderőnemi Szemlélőség (különleges műveleti)*, <https://honvedelem.hu/a-magyar-honvedseg-parancsnoksaga.html> [Access: 30.09.2021]; Ministero Della Difesa: *Comando Interforze per le Operazioni delle Forze Speciali (COFS)*, https://www.difesa.it/SMD_/COFS/Pagine/default.aspx [Access: 30.09.2021]; Nacionālie bruņotie spēki-Sastāvs, <https://www.mil.lv/en/node/635> [Access: 21.09.2021]; Lietuvos kariuomenė: *Specialiuju operacijų pajėgos-Struktūra*, <https://www.kariuomene.lt/pajegos-ir-kariniai-vienetai/specialiuju-operaciju-pajegos/stuktura/23245> [Access: 21.09.2021]; Ministerie van Defensie: *Special Operations Command*, <https://www.defensie.nl/organisatie/bestuursstaf/eenheden/socom> [Access: 21.09.2021];

Forsvaret: *Forsvarets Spesialkommando*, <https://www.forsvaret.no/om-forsvaret/organisasjon/forsvarets-spesialstyrker/forsvarets-spesialkommando-fsk> [Access: 21.09.2021]; *IHS Jane's Sentinel Country Risk Assessments. Central Europe and the Baltic States 2013*, Issue Thirty-Two, IHS Jane's, Coulsdon 2013, s. 370; B. Jagodziński, *Działania i rozwój jednostek specjalnych* [*Activities and development of special units*], „Przegląd Bezpieczeństwa Wewnętrznego”, 2020, No. 22 (12), p. 181; 5. pluk specjalnego urczenia: *Od soboty slovenské Sily pre speciálne operácie na novej platforme*, <https://www.mil.sk/85597/?pg=1> [Access: 21.09.2021]; Špeciálne jednotky Slovenskej republiky: *5. pluk speciálneho určenia*, <https://www.specialunits.sk/5-pluk-specialneho-urcenia/> [Access: 21.09.2021]; Poveljstvo sil Slovenske vojske: *Enota za specialno delovanje*, <https://www.slovenskavojska.si/o-vojski/obseg-in-struktura/poveljstvo-sil/enota-za-specialno-delovanje/> [Access: 21.09.2021]; Ministerio de Defensa-Ejército de Tierra: *Mando de Operaciones Especiales*, https://ejercito.defensa.gob.es/unidades/Alicante/cg_moe/Organizacion/index.html [Access: 21.09.2021]; Ministerio de Defensa-Infantería de Marina: *Fuerza de Guerra Naval Especial (FGNE)*, <https://armada.defensa.gob.es/ArmadaPortal/page/Portal/ArmadaEspañola/buquesinfanteria/prefLang-es/03fuerza-guerra-naval-especial-fgne> [Access: 21.09.2021]; Bianet: *Özel Kuvvetler Komutanlığı Nedir?* 28.12.2009, <https://m.bianet.org/bianet/insan-haklari/119150-ozel-kuvvetler-komutanligi-nedir> [Access: 21.09.2021].

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.30

Magdalena REDO¹

THE HIGHER VALUATION OF INVESTMENT RISK AND MORE EXPENSIVE CAPITAL IN POLAND AS A THREAT TO THE DEVELOPMENT OF POLISH ENTERPRISES

For years, the cost of capital in Poland has been among the highest in the EU. While in 2005–2015, interest rates on long-term loans for enterprises in Czechia and Estonia were at levels similar to Germany, in Poland, rates were always higher – in 2009–2013, even twice as high. Throughout the 18-year analysis period, enterprises in Poland paid 35% more interest than those in Czechia, and 41% more than in Estonia. Over the entire period, Polish enterprises paid PLN 57 bn more interest than if rates had been the same as in Czechia, PLN 74 bn more than in Estonia, and PLN 118 bn more than in Germany. This has resulted in higher debt among Polish enterprises, along with lower levels of innovation, creditworthiness, competitiveness, salaries, tax base, and investment profitability, and thus slower development and weaker future development prospects for the Polish economy.

Keywords: interest rate, cost of the loan, corporates, credit rating, risk premium, investment risk

1. INTRODUCTION

The reduction of interest rates on a global scale after the outbreak of the US financial crisis in 2008 and the progressive proliferation of capital (additionally reinforced by quantitative easing) led to a reduction in the cost of capital and facilitated access to it. Unfortunately, not for all to the same extent. This was also felt in Poland, when NBP (*National Bank of Poland*) also reduced interest rates to a historically low level (since mid-2013: 2.5%, in 2015: 1.5% and in 2020: 0.1%). Paradoxically, this made it difficult to objectively assess the level of the cost of capital in Poland in the past decade, and diverts attention from the key importance of successively strengthening the state's credibility in the era of globalization of financial markets and strong dependence on foreign financing – both economic, political, institutional, legal and others. It determines the inflow of foreign capital, determines its cost, and thus determines investments, the level of economic growth and the wealth of subsequent generations.

¹ Magdalena Redo, Nicolaus Copernicus University in Toruń, Poland; e-mail: redo@umk.pl.
ORCID: 0000-0002-1274-3181.

Therefore, it should be emphasized that the market cost of capital in Poland has been one of the highest in the EU for years and, what is even more important, the difference in the level of this cost is vast – not only in comparison to the most reliable countries, but also to many CEE countries. In Poland, capital is borrowed expensively by all entities – the government, enterprises and consumers – fig. 1–3.

The Polish government has been one of the most expensive borrowing governments in the EU for years. In November 2022, only the governments of Hungary and Romania borrowed capital more expensive than Poland did. However, such a statement does not reflect the scale of the problem. Attention should be paid to the size of the difference in the cost of capital borrowed by the Polish government and most EU governments. Today, the Polish government borrows capital two or even three times more expensive than most EU countries – fig. 1.

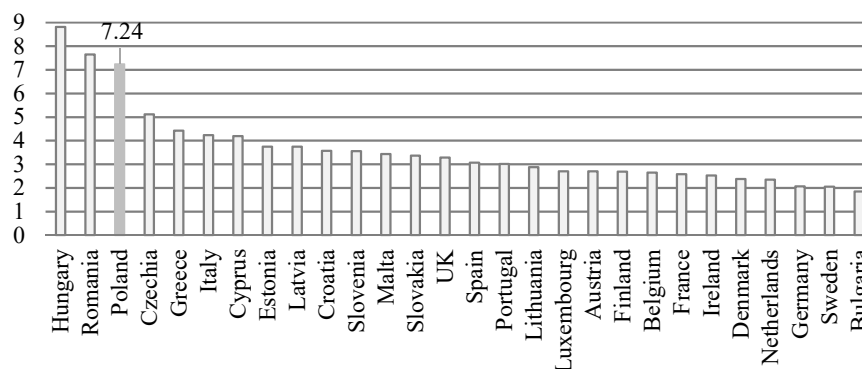
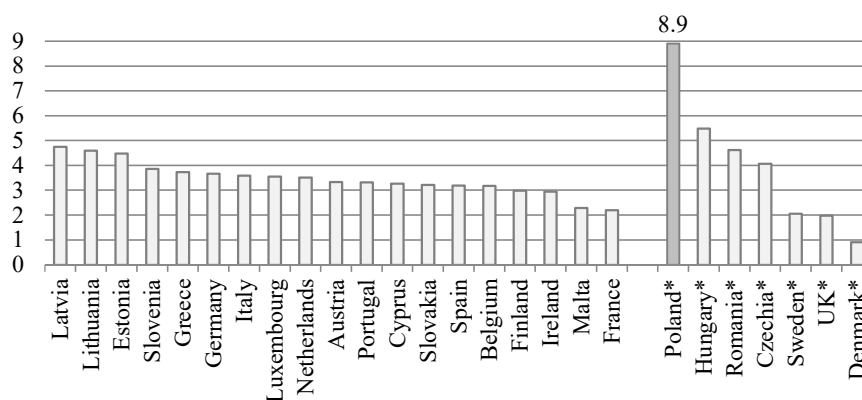


Figure 1. Long term government bond yields as of November 2022 (%)

Source: own elaboration on the basis of Eurostat (2023b).

It should be emphasized that the difference in the cost of debts incurred reaches 4–5 percentage points which, given the annual issuance of Treasury bonds in Poland reaching PLN 120–210 billion in recent years, gives even PLN 10 billion more expensive yearly cost of obtaining financing for public debt and more expensive its service in the years to come. What's more, because the Polish government has been one of the most expensive borrowing governments in Europe for years, the Polish taxpayer has for years been bearing the burden of public debt servicing, which is noticeably more expensive than in other EU countries, in the form of higher taxes and poorer subsidization of public services. It should be noted that with public debt currently amounting to almost PLN 1.5 trillion (Ministerstwo Finansów, 2023), each percentage point of more expensive capital means PLN 15 billion higher interest costs per year. Instead of wasting taxpayers' money on inflated interest on public debt, the credibility of the state should be strengthened and maintained, and the funds thus saved should be allocated to investments, better funding for education, or lower taxes.

However, this is only the tip of the problem. Unfortunately, not only the government, but all other economic entities borrow expensive capital in Poland. Mortgage interest rates in Poland are currently the highest in the entire EU and, what is particularly important, they are even three times higher than in most EU countries – fig. 2. It should therefore be emphasized that even in Romania and Hungary mortgage interest rates are about half lower than in Poland.

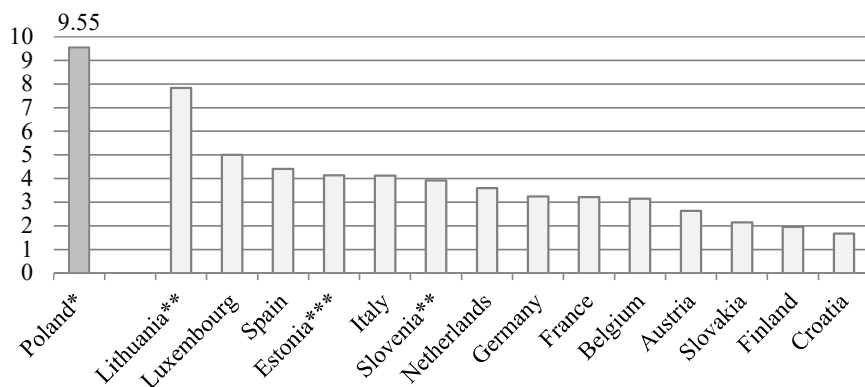


* data concerns loans in local currency, different source of data

Figure 2. The average interest rate (%) of the Euro-denominated loans for house purchase as of January 2023 in the Eurozone and in Poland (of the PLN-denominated loans) and in UK, Sweden, Denmark, Czechia, Hungary, Romania (of the national currency-denominated loans; second quarter 2022 average)

Source: own elaboration on the basis of ECB (2023b); NBP (2023a); European Mortgage Federation (2022).

Companies in Poland also borrow expensive capital, which undoubtedly limits investments and development of Polish economy. Moreover, in the case of interest rates on corporate loans, the difference is significant compared to the interest rates on corporate loans in other EU countries – in particular those belonging to the euro zone. It should be emphasized that the difference in the level of interest rates on corporate loans between Poland and most EU countries is currently at least 2–3 times and reaches 4–7 percentage points – fig. 3.



* PL: data concerns loans in PLN, different source of data

** LT, SI: data for 12.2022; *** EE: data for 10.2022

Figure 3: The average interest rate (%) of the Euro-denominated loans for corporations as of January 2023 in the Eurozone (over EUR1 m) and in Poland (of the PLN-denominated loans over PLN4 m)

Source: own elaboration on the basis of ECB (2023c); NBP (2023a).

With the current level of liabilities of Polish enterprises to banks (PLN 404 billion, 01.2023; NBP, 2023b), this means PLN 20–30 billion higher costs of debt servicing each year compared to the situation if they paid interest at a level similar to that of most EU countries today (fig. 3, fig. 4).

Unfortunately, the ECB collects unified statistics on market interest rates only for the euro zone countries. In addition, due to statistical confidentiality, data are not available for all countries and for all years. This makes it difficult to compare the cost of the loan across the EU – especially with non-euro countries where statistics are compiled in different ways. For this reason, a comparative analysis of the level of interest rates on loans for enterprises in Poland and selected EU countries: outside the euro area (Czechia) and those belonging to the euro area (Estonia and Germany) is carried out in the further part of the study, in order to assess the scale of the difference in the level of cost of the loan, both in comparison with highly developed countries and those at a similar level of development.

The aim of the study was to compare the level of interest rates on loans to enterprises in Poland and other EU countries in 2005–2022 and the assessment of the credibility of individual countries, to assess the difference in the level of interest paid and the scale of the financial effects of these differences in the analyzed 18-year period for the level of debt and investments of Polish enterprises. For this purpose, a study of the literature on the subject was carried out, followed by a comparative analysis of statistical data using the tools of descriptive statistics, and finally, using the method of inductive reasoning, the results were evaluated and conclusions were synthesized. Due to the incompleteness of ECB data, the analysis also used data published by the national central banks (National Bank of Poland, Czech National Bank and Eesti Bank).

2. CREDIT RATING – CREDIBILITY VALUATION. LITERATURE OVERVIEW

In the era of highly developed IT technology, dynamic multiplication of capital and advanced globalization, the world of financial markets has become smaller, more transparent and transactions on it have become extremely fast (Redo, Gębska, 2020). As a result, competition is growing dynamically – investors compete with each other for more attractive investment opportunities. However, there is an underestimated turn to this situation. Growing competition in increasingly transparent financial markets also results in increased competition between entities seeking capital, as everyone needs more and more of it – both to finance economic development, but also to roll over the deepening debt that is common nowadays. It is the pursuit of profits that accelerates the functioning of (not only) the world of investments and – importantly – increases the demand for greater transparency of markets, i.e. processed standardized information. It is therefore not surprising that, over time, rating agencies have become very influential institutions and it seems that this process will continue.

The growing demand for capital in the face of increasingly transparent markets makes investors more sensitive to shocks, as technology and the availability of information make it easier for them to move capital quickly. Because of that stability, credibility and predictability are so crucial nowadays. Their continuous strengthening and striving for the mainstream level determines the inflow of capital to the country, the stability of access to it, and thus the investment risk and its market cost.

It is easy to see the relationship between the credibility assessment of recognized rating agencies and the cost level of capital in Poland and neighboring countries. Therefore, it

should be emphasized that Poland (and thus entities operating in it) has a much lower valued credibility than the so-called safe heaven countries – table 1. Poland is separated from the highest AAA credibility by as many as seven levels in the rating assessment (A–, A, A+, AA–, AA, AA+). This is why much less capital flows to Poland than to the most reliable countries (Leszczyńska, Puchalska, 2019), its inflow is less stable, and the price of capital is noticeably higher (fig. 1–3). Until we start strengthening Poland's stability – economic, political, institutional, legal and others – and build trust by strengthening predictability, then capital in Poland will always be more difficult to access and valued as more expensive (Redo, 2017).

Table 1. A sovereign credit ratings for EU countries by Standard&Poor's (as of 12.12.2022)

Denmark	AAA
Germany	AAA
Luxembourg	AAA
Netherlands	AAA
Sweden	AAA
Austria	AA+
Finland	AA+
Ireland	AA–
Belgium	AA
France	AA
Spain	A
Portugal	BBB+
Italy	BBB
Greece	BB+
Czechia	AA–
Estonia	AA–
Slovenia	AA–
Latvia	A+
Lithuania	A+
Slovakia	A+
Poland	A–
Croatia	BBB+
Romania	BBB–
Bulgaria	BBB
Hungary	BBB
Cyprus	BBB
Malta	A–
UK	AA

Source: own elaboration on the basis of S&P (2022).

However, since building credibility and stability at the level of the most credible countries requires not only diligent work but also time, for now we should compare ourselves with the credibility of similar countries to assess the effectiveness of economic policy in Poland – e.g. with the CEE countries which also changed their political systems 3 decades ago and joined the EU in the meantime. Compared to these countries, Poland presents poorly. Rating A– places Poland only in 7th place among CEE countries (table 1). Therefore, it should be emphasized that Slovakia, Lithuania and Latvia have a two-grade higher rating than Poland (A+), and Czechia, Estonia and Slovenia have a three-grade higher rating (AA–). In the case of the latter, the credibility rating is only slightly lower than that of, for example, the UK (AA). Czechia and Estonia are therefore perceived as almost equally credible. It is worth adding here that, according to the IMF and World Bank classification, all 6 CEE countries mentioned are regarded as advanced economies (along with the most credible highly developed countries in the world; IMF, 2022; Redo, 2018).

This is why capital in Poland is more expensive than in these countries (fig. 1–3). Poland's credibility is assessed noticeably lower. It should also be added that Poland's rating has not been increased since 2007. The process of stabilizing Polish economy and

strengthening confidence in it observed in the 1990s and 2000s was stopped, according to the markets' opinion.

Unfortunately, the relationship between credibility and access to foreign financing and its cost is underestimated in Poland. The importance of credit risk assessment and credit rating for the interest rate and capital inflow is confirmed by empirical research in many countries. Their results confirm the important role of macroeconomic factors and especially uncertainty in the macroeconomic environment for the interest rates. Awareness and understanding of these interdependencies is particularly important in the case of developing countries where the risk premium and interest rate spreads are, as a result, the interest rate levels are still much higher than in developed countries – see overview of interest rates in 140 emerging markets and developing economies (Feyen, Huertas, 2020), for Central and Eastern Europe: Claeys, Vennet (2008), Dumičić, Ridzak (2013), Berglöf, Bolton (2003), Riess et al. (2002), for Latin America: Brock, Rojas (2000), Afanasieff et al. (2002), for Central Asia: Almarzoqi, Naceur (2015). These studies indicate the problem of high degree of information asymmetry and high risk premia in developing countries. Thus, they prove the need to pay more attention to the importance of broadly understood credibility of the country and the so-called credit rating for the level of interest rates on corporate loans, which determines economic development that is so important for developing countries. Although it should also be analyzed in highly developed countries – the econometric analysis confirms the importance of credit risk as relevant in the determination of bank's interest rates not only in less credible countries (e.g. Santos 2013) but also in the US (e.g. Claessens et al., 2018). Moreover, research shows that low-capital banks – which seems to correspond to the situation of the banking sector in developing countries (i.a. in Poland) – charge a higher premium for systematic risk than for other risks (Santos, Winton, 2019), and that a smaller, capital-constrained bank is characterized by strong sensitivity of interest rates on loans to enterprises to a deterioration in the rating (Claessens et al., 2018). This problem has been recognized for years in countries with lower credibility – even by some governments. It is worth paying attention to the Performance and Credit Rating Scheme (PCRS) implemented in India almost two decades ago by the National Small Industries Corporation (a body under the Ministry of MSMEs) to reduce the information asymmetry prevailing in the MSME (micro, small, and medium-sized enterprise) sector (Shankar, 2019). It contributed to higher amounts of loans issued, also at lower rates of interest in the next years (Mohapatra, 2012). It also resulted in other benefits for enterprises that get feedback through the rating process on their strengths and weaknesses, benchmark themselves with other MSMEs and track their progress over time by looking at the variation in their credit ratings. All this facilitates establishing economic cooperation and strengthens their market position. Similar solutions should be introduced in Poland. Creating a systemic solution promoting reliable, broader and standardized information about Polish enterprises would reduce the problem of information asymmetry and would strengthen the credibility of Polish enterprises – not only in the eyes of lenders and investors, but also business partners, facilitating their access and functioning on foreign markets.

The important role of credit rating in decision-making processes, which is to limit the phenomenon of widespread information asymmetry, is finally confirmed by the internal individual rating systems developed by banks for years (Treacy, Carey, 2000). That is why it is so important to understand the principles of operation of financial mechanisms that govern today's capital flows and the enormous power that credibility gives today. Without its continuous, reliable and consistent strengthening, the market cost of capital will not be reduced in Poland to the levels of more credible countries, and access to financing will not

be easier. And this means dooming Polish economy to less investment and consumption, i.e. slower economic development, and introducing subsequent generations of Poles to a faster increase in debt and lower level of wealth.

3. DIFFERENCE IN INTEREST RATES ON CORPORATE LOANS IN POLAND, CZECHIA, ESTONIA AND GERMANY

The negative effects of the lower valuation of Poland's credibility are also felt by Polish enterprises, as it reduces their competitiveness and hinders development, and also results in lower salaries and tax revenues. Unfortunately, these differences have persisted for years, so that the financial, economic and social costs for the Polish economy accumulate. Therefore, it should be emphasized that the cost of capital in Poland has been high for a long time. For the past 18 years, the average interest rate on long-term corporate loans in Poland has been practically always higher than in Czechia and Estonia (fig. 4). And although during the covid-19 pandemic interest rates on loans in Poland fell to historically low levels and equaled interest rates in Czechia and Estonia, at that time they were still noticeably higher than in the most stable countries – cf. the level of interest rates on corporate loans in Germany in 2020–2021 (fig. 4).

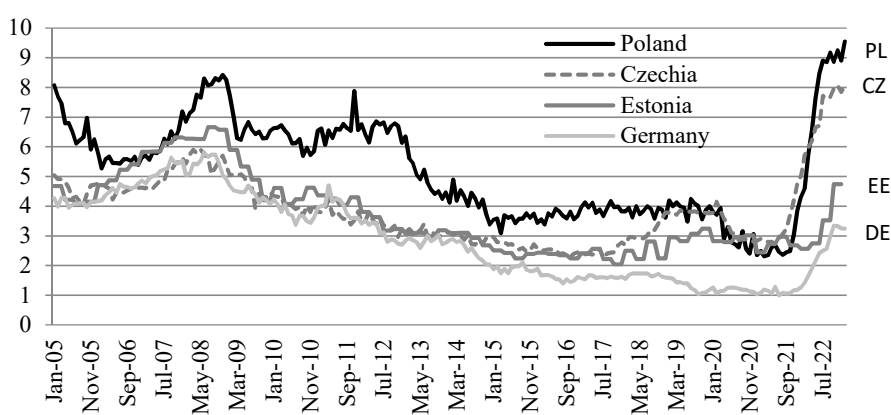


Figure 4. Bank interest rates on long-term loans to non-financial corporations in the period 01.2005 – 01.2023 (%)

Source: own elaboration on the central banks' data (NBP, 2023b; CNB, 2023; Eesti Bank, 2023; ECB, 2023c).

Moreover, attention should be paid to the differences in the level of interest rates on loans. While in Czechia and Estonia it was at a similar level in 2005–2015 and – what is especially important – at a level similar to Germany, in Poland it was practically always higher by min. 1 percentage point, and in 2009–2013 even by 2–3 percentage points – i.e. was then even twice as high as in the analyzed countries.

Throughout the analyzed period, the average interest rate on long-term loans for enterprises in Poland was 5.23%, while in Czechia it was 3.88%, in Estonia 3.70% and in Germany 3.01% – col. 1 table 2. This means that over the past 18 years, corporate loans in Poland were on average 35% more expensive than in Czechia, 41% more expensive than in Estonia and 64% more expensive than in Germany (col. 5 table 2).

Table 2. The average bank interest rates on long-term loans to non-financial corporations in the period 01.2005 – 01.2023 (%) and difference in the level of interest rates between Poland and selected countries (in percentage points, in percentage, in PLN billion, as a percentage of the current debt of enterprises in banks, as a percentage of the average annual investment level)

	Interest rates (01.2005 – 01.2023)			Over 18 years in Poland more expensive by				
	average %	S(x) percen- tage point	V %	percenta- ge point (average per year)	%	PLN bn (in total for 18 years)	as a percentage of loan debt (2022, NBP)	as a percentage of the average investment level in 2005–2021 (GUS)
Poland	5.23	1.71	33					
Czechia	3.88	1.23	32	1.34	35	56.9	14	23
Estonia	3.70	1.29	35	1.51	41	74.5	19	31
Germany	3.01	1.42	47	1.94	64	118.2	30	48

Source: own calculation on the central banks' data (NBP, 2023b; CNB, 2023; Eesti Bank, 2023; ECB, 2023c).

This means that Polish enterprises have been paying 1/3 to 2/3 more expensive interest on loans every year for years than enterprises in other EU countries – i.e. on average from 1.34 to 1.94 percentage points per year more interest – col. 4 table 2. With the current debt of Polish enterprises in banks (PLN 398.1 billion, 12.2022; NBP, 2023b), each 1 percentage point of higher interest rate is equivalent to PLN 4 billion higher financial costs annually. Throughout the 18-year period of the analysis, taking into account the different level of interest rates in individual countries and the changing level of bank debt of Polish enterprises, they paid a total of PLN 56.9 billion more in interest than if the interest rates in Poland were the same as in the Czech Republic, PLN 74.5 billion more interest than if the interest rate in Poland was the same as in Estonia and as much as PLN 118.2 billion more interest than if the interest rate in Poland was the same as in Germany – col. 6 table 2. These amounts are huge financial resources for Polish enterprises and the entire Polish economy. Lower financial costs of Polish enterprises in the past two decades – at the level of Czechia or Estonia – would result in their lower debt, and thus higher creditworthiness, flexibility and development opportunities. The determined difference in total interest costs (col. 6 table 2) of Polish enterprises for the past 18 years corresponds to 14–30% of their current debt (col. 7 table 2). They could be so much less indebted today than they are. They could also allocate these funds, for example, to investments that the Polish economy needs tremendously to be able to catch up with the development gap when compared with highly developed countries. The determined difference in the total interest costs (col. 6 table 2) of Polish enterprises for the past 18 years corresponds to 23–48% of the average investment level in Poland in 2005–2022.

It is the lower stability and lower credibility that are two of the main reasons for the low level of investment in Poland compared to other EU countries – fig. 5.

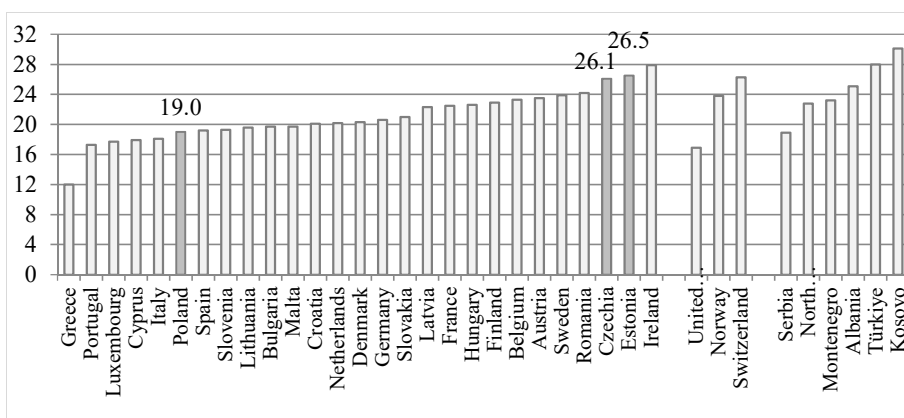


Figure 5. The average annual level of investment in 2010–2021 (% of GDP)

Source: own elaboration on the basis of Eurostat (2023a).

Poland had the sixth lowest average investment level in 2010–2021 among EU countries. Investments accounted for an average of 19% of Poland's GDP in the analyzed period, while in 11 EU countries it was 22–28% of GDP, i.e. 3–11% of GDP more than in Poland – fig. 5. It must be noted that every 1% of investment in relation to GDP equals over PLN 30 billion annually. Thus, if investments in Poland had remained in the past 12 years at the level of the Czech Republic (26.1% of GDP) or Estonia (26.5% of GDP) as analyzed in the study, i.e. 7 percentage points higher, i.e. 37% higher on average, this would translate into faster economic growth in recent years, narrowing the development gap and creating much stronger competitive position of Polish enterprises (Żukrowska, 2012; Żukrowska, 2016; Bengoa, Sanchez-Robles, 2003; Chowdhury, Mavrotas, 2006).

Finally, it should be emphasized that more expensive capital in Poland, apart from higher costs, lower creditworthiness, faster increase in debt, also results in lower profitability of investments, which means that they are not implemented in Poland, but in other countries. What's more, due to the higher interest rate on capital in Poland, investments that are profitable in other countries turn out to be low-profit or even unprofitable in Poland. This is an additional reason for the relatively low level of investment in Poland compared to other countries.

It's worth stressing what a 1 percentage point higher loan interest rate means. With an investment loan of PLN 20 million taken out for 10 years (and repaid in equal installments), each additional percentage point means PLN 1.1–1.3 million more interest over the entire loan period – col. 2 table 3. So, if the current differences in interest rates persist in the next decade (fig. 4: current interest rates on long-term loans for enterprises in Poland: 9.5%, in Czechia: 8%, in Estonia: 5%, in Germany: 3%), then a Polish company would pay about PLN 11 million in interest on such a loan, PLN 9 million in interest in Czechia, about PLN 5.5 million in interest in Estonia, and PLN 3.2 million in interest in Germany. The difference is huge – almost PLN 8 million compared to the interest cost of a company from Germany (interest in Poland 3.5 times higher), PLN 5.5 million compared to an Estonian company (interest 2 times higher) and PLN 2 million compared to a company from Czechia (1/5 higher interest).

Table 3. Total interest (in PLN) for the entire loan period depending on the interest rate

annual interest rate	corporate loan PLN 20 million 10 years equal installments	mortgage loan PLN 500,000 30 years equal installments
1	2	3
10%	11 716 177	1 079 629
9%	10 402 186	948 321
8%	9 118 623	820 776
7%	7 866 035	697 544
6%	6 644 920	579 191
5%	5 455 724	466 279
4%	4 298 833	359 348
3%	3 174 579	258 887
2%	2 083 229	165 315

Source: own calculation.

It is worth checking the difference in the level of interest on mortgage loans in Poland and other EU countries by comparing the current level of interest rates on mortgage loans (fig. 2) with the difference in the total amount of interest for the entire 30-year loan period in the case of a loan for PLN 500,000 (col. 3 table 3). Each additional percentage point means over PLN 100,000 interest more over the entire 30-year loan period. So if the current differences in mortgage interest rates persist in the coming decades, a Pole will pay several hundred thousand more in PLN for the same loan than citizens of most EU countries.

4. SUMMARY

The market cost of capital in Poland has been one of the highest in the EU for years and, what is even more important, the difference in the level of this cost is huge – not only in comparison to the most reliable countries, but also to many CEE countries belonging to the EU.

The difference in the level of interest rates on corporate loans between Poland and most EU countries is at least 2–3 times today and reaches 4–7 percentage points. With the current level of liabilities of Polish enterprises to banks (PLN 404 billion, 01.2023; NBP, 2023b), this means PLN 20–30 billion higher costs of servicing this debt each year compared to the situation if they paid interest at the same level as in most EU countries today. More expensive interest rates reduce the profitability of Polish enterprises, and thus their competitive position, creditworthiness, i.e. the current level of investment and economic development in Poland. What's more, it additionally lowers the development prospects, which additionally discourages from investing also in the next years. In addition, the higher interest rate on capital in Poland means that investments that are profitable in other countries (where capital is cheaper) turn out to be low-profit or even unprofitable in Poland. This is an additional reason for the low level of investment in Poland compared to other countries. More expensive capital in Poland also reduces the degree of innovation of Polish enterprises and their technological advancement. All this translates into a slower increase in wages and a slower increase in the level of wealth of Poles. What's more, it also lowers

the tax base, and thus makes it impossible to improve the quality of public services in Poland and to reduce public levies, which is necessary to speed up the catch-up process.

It should be added that other business entities also borrow expensive capital in Poland. For years, the Polish government has been one of the most expensive borrowing governments in the EU. The difference in the cost of debts is 4–5 percentage points, which, with annual Treasury bond issues in Poland reaching PLN 120–210 billion in recent years, makes it even PLN 10 billion more expensive annually to obtain financing for public debt and its servicing in the coming years, which will be more expensive by another billion zlotys. It is the Polish taxpayer who bears the burden of servicing public debt, which is noticeably more expensive than in other EU countries, in the form of higher taxes for years and worse subsidization of public services (than they could be if the cost of capital was lower and on the level similar to most EU countries). This additionally lowers the chances of reducing labor costs in Poland, without which there will be no noticeable acceleration in the development of Polish enterprises in the coming decades. Loans for households are also more expensive in Poland – the interest rate on mortgage loans in Poland is the highest in the entire EU and, what is particularly important, it is up to three times higher than in most EU countries. More expensive loans reduce the level of consumption, and thus the sales of Polish enterprises, which additionally inhibits investments and development.

In the era of high and growing transparency of globalized financial markets, the time to make investment decisions is getting shorter and the importance of credibility assessment in calculating the investment risk premium is growing. This is confirmed by the difference in the level of the cost of capital between Poland and not only the most reliable countries, but also CEE countries with a higher rating. Poland (A–) has credibility 7 ratings lower than the countries with the highest rating and 3 ratings worse than Czechia, Slovenia and Estonia (AA–) and 2 grades worse than Slovakia, Lithuania and Latvia (A+). In all these countries, capital is cheaper than in Poland by even several percentage points. At the end of the third quarter of 2022, the total amount of public debt in Poland, corporate loans and household loans amounted to PLN 2.7 trillion, which means that each 1 percentage point of higher interest rate is equivalent to an additional PLN 27 billion in interest per year. Therefore, a few percentage points more expensive capital in Poland means that the Polish economy allocates a multiple of this amount each year to paying interest instead of investing and consumption. As a result, the level of wealth of Poles, both present and future generations, is lower than it could be if Poland had built a higher credibility (economic, political, institutional, legal, etc.) and gradually strengthened it. This is the result of the underestimated relationship between credibility and the availability of foreign financing and its cost in Poland.

REFERENCES

- Afanasieff, T.S., Lhacer, P.M., Nakane, M.I. (2002). *The Determinants of Bank Interest Spread in Brazil*. "Money Affairs", Vol. XV, No. 2.
- Almarzoqi, R., Naceur, S.B. (2015). *Determinants of Bank Interest Margins in the Caucasus and Central Asia*. "IMF Working Paper", Vol. 15/87.
- Berglöf, E., Bolton, P. (2003). *The great divide and beyond – Financial architecture in transition*. "CEPR Discussion Paper", No. 3476.
- Bengoa, M., Sanchez-Robles, B. (2003). *Foreign direct investment, economic freedom and growth: new evidence from Latin America*. "European Journal of Political Economy", No. 19.

- Brock, P.L., Rojas, L. (2000). *Understanding the behavior of bank spreads in Latin America*. "Journal of Development Economics", Vol. 63(1).
- Chowdhury, A., Mavrotas, G. (2006). *FDI and growth: What causes what?* "The World Economy", No. 29(1).
- Claessens, S., Law, A., Wang, T. (2018). *How Do Credit Ratings Affect Bank Lending Under Capital Constraint*. "BIS Working Papers", Vol. 747.
- Claeys, S., Van der Venet R. (2008). *Determinants of bank interest margins in Central and Eastern Europe: A comparison with the West*. "Economic Systems", Vol. 32(2).
- Czech National Bank (2023). *Non-financial corporations – loans up to 30 mil. CZK – total*.
- Dumičić, M., Ridzak, T. (2013). *Determinants of banks' net interest margins in Central and Eastern Europe*. "Financial Theory and Practice", Vol. 37 (1).
- ECB (2023a). *Euro Area Statistics. Bank Interest Rates – Loans*.
- (2023b). *Euro-denominated loans for house purchase; total floating rate or initial rate fixation to euro area households (percentages per annum, rates on new business)*.
- (2023c). *Euro-denominated loans over €1 million; initial rate fixation of more than five years to euro area non-financial corporations (percentages per annum, rates on new business); for reasons of statistical confidentiality data are not available for all countries*.
- Eesti Bank (2023). *Loans granted to non-financial corporations by credit institutions. Long-term loan (over 1 year)*.
- European Mortgage Federation (2022). *Quarterly Review of European Mortgage Markets*.
- Eurostat (2023a). *Gross fixed capital formation (investments)*.
- (2023b). *Long term government bond yields*.
- Feyen, E., Huertas, I.Z. (2020). *Bank Lending Rates and Spreads in EMDEs Evolution, Drivers, and Policies*. "Policy Research Working Paper", No. 9392.
- IMF (2022). *Fiscal Monitor*.
- Leszczyńska, M., Puchalska, K. (2019). *Direct Foreign Investment as a Development Factor of the Economy and its Economic Security*. "Humanities and Social Sciences", Vol. 26(2). DOI: 10.7862/rz.2019.hss.17.
- Ministerstwo Finansów (2023). *Zadłużenie sektora finansów publicznych – stan na III kwartał 2022 r.*
- Mohapatra, A. (2012). *Study of the Performance and Credit Rating Scheme for Micro and Small Enterprises*. Ministry of Micro, Small and Medium Enterprises. Access on the internet: https://msme.gov.in/sites/default/files/PCR_EN.pdf.
- NBP (2023a). *Kredyty i inne należności monetarnych instytucji finansowych od przedsiębiorstw niefinansowych*.
- (2023b). *Średnie oprocentowanie nowych i renegotjowanych umów złotych*.
- Redo, M. (2017). *High public debt servicing costs for the agency model of debt management in Poland*. "Law and Administration in Post-Soviet Europe", Vol. 1. DOI: 10.1515/lape-2017-0004.
- (2018). *Znaczenie skuteczności polityki pieniężnej dla bezpieczeństwa państwa*. Toruń: Wydawnictwo Adam Marszałek.
- Redo, M., Gębska, M. (2020). *Globalization in Growing Financial Markets as a Threat to the Financial Security of the Global Economy*. "European Research Studies Journal", Vol. 23. DOI: 10.35808/ersj/1764.
- Riess, A., Wagenvoort, R., Zajc, P. (2002). *Practice makes perfect: a review of banking in Central and Eastern Europe*. "European Investment Bank Papers", Vol. 7.

- Santos, C. (2013). *Bank interest rates on new loans to non-financial corporations – one first look at a new set of micro data*. Economic Bulletin and Financial Stability Report Articles and Banco de Portugal Economic Studies.
- Santos, J., Winton, A. (2019). *Bank Capital, Borrower Power, and Loan Rates*. “*The Review of Financial Studies*”, Vol. 32(11).
- Shankar, S. (2019). *The Role of Credit Rating Agencies in Addressing Gaps in Micro and Small Enterprise Financing: The Case of India*. “*Asian Development Bank Institute Working Paper*”, No. 931.
- Standard&Poor’s (2022). *Sovereign Risk Indicators*, as of 12.12.2022.
- Treacy, W.F., Carey, M. (2000). *Credit risk rating systems at large US banks*. “*Journal of Banking & Finance*”, Vol. 24(1–2).
- Żukrowska, K. (2012). *Harnessing globalization, czyli ujarzmianie globalizacji jako motor na rzecz rozwoju*. Warszawa: Oficyna Wydawnicza SGH.
- (2016). *Otwarcie. Konkurencyjność. Wzrost*. Warszawa: SGH.

Received: March 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.31

Grzegorz ROSŁAN¹

A DESCRIPTION OF MILITARY THREATS TO POLAND'S AIR SAFETY

The events of the past year have made many experts aware that the contemporary international security environment is increasingly uncertain, complex and difficult to predict. It is, therefore, reasonable to present current issues related to air safety, which, in the author's opinion, are crucial for the functioning of the Polish state in the area of medium- and long-term national and international policy. The aim of this article is to describe the contemporary air safety environment, which is characterized by a dynamic process of transformation of the types of threats; these include the ambitions of some countries to dominate in this dimension.

The study concerns the military dimension of Poland's air security. The author's analysis proves that air threats are not a new phenomenon, but currently they have an extremely wide range of application in armed conflict. The research method adopted is qualitative analysis supported by the technique of real-meaning definition.

Keywords: air security, air threats, armed conflict

1. INTRODUCTION

The sense of security is inextricably linked to the development of new areas by man, which are a derivative of the implementation of new technological solutions. This also applies to the rapidly growing exploration of the airspace, which expands and separates the catalog of types of security, taking into account the spatial criterion. In this context, it should be emphasized that we are witnessing the development of various forms of human air activity, which on the one hand force the continuous development of science and technology, and on the other generate new threats. The aforementioned human air activity contributes not only to the implementation and dissemination of new technological achievements, it is also the main factor in the civilizational development of humanity and a source of threats that may disrupt this development (Roslan, 2018).

The contemporary air safety environment is characterized by a dynamic process of transformation of the types of threats, which include, among others, ambitions of some countries to dominate in this dimension. Moreover, threats and risks in the area of air safety have or may have a negative impact on Poland's security. Therefore, efforts in the field of

¹ Grzegorz Roslan, Rzeszow University of Technology, Poland; e-mail: g.roslan@prz.edu.pl.
ORCID: 0000-0002-2566-5004.

air security in Poland require constant monitoring of opportunities and threats that airspace exploration brings (Rajchel, 2015).

Considering the above, it is reasonable to present current issues related to air safety, which, in the author's opinion, are crucial for the functioning of the Polish state in the area of medium and long-term national and international policy. Due to the complexity of the issue, the military dimension of Poland's air security was treated in a special way.

2. THE CONCEPT OF A THREAT TO STATE AIR SAFETY

A threat to the air security of the state should be understood as a state that would threaten its proper functioning in a specific situation. According to J. Gotowała, “an air threat is a possibility of an attack using an aircraft (object) on military facilities or civilian facilities important for the functioning of the state” (Gotowała, 2002). In other words, it is a situation in which there is a probability of a dangerous state threatening the functioning of the state, implemented with the use of e.g. aircraft (objects), hereinafter referred to as means of air attack. In the definition cited above, the probability, i.e. the eventuality (possibility) of the occurrence of an air threat, is clearly emphasized in the first place. J. Gotowała notes that when forecasting threats in the air, it is assumed that all air objects approaching the airspace of a given state for an unknown purpose or violating this space and changing the prescribed flight conditions for no reason should be treated as objects that can take destabilizing actions and cause certain type of threat. This means that one of the causes of a threat to the territory of a state (alliance) from the airspace may be intentional or accidental impact of airborne objects (*air attack means* – AAM).

An air threat is a situation in which there may be a varied, as to the means of air attack, impact from the third dimension, aimed at achieving specific (measurable) effects affecting the functioning of specific forces and means, adequate to the scale and intensity of a given conflict (Roslan, 2014). The threat from the air has become an inseparable element of modern military operations, and the scale of the use of AAM largely depends on the combat potential of a possible adversary in a specific situation. A threat to the durability of the state's defense system, as a result of air impact, may occur in virtually any state of internal and external political relations; in a state of peace, in a state of internal or external anarchy or in a state of local armed conflict conducted with the participation of e.g. Polish armed forces outside the country (Roslan, 2012).

3. THE MILITARY DIMENSION OF THE THREAT TO STATE AIR SAFETY

The analysis of military air threats allows us to conclude that the development of means of combat, including aviation, which has strengthened its position of the main implementer of neutralizing the physical resistance of a potential enemy, has made the airspace the primary arena of war struggles in the first decade of the 21st century. The implication of this situation is the wide spectrum of tasks performed by aviation in solving various crisis situations, from the moment they occur. On the other hand, it should be remembered that aviation (including, above all, military) will be treated by many countries as a significant element of threat to air safety. Therefore, it will be a military air threat that should be treated very seriously, especially since in recent years analyzes of air threats related to broadly understood air terrorism have dominated. In other words, to asymmetric threats occurring in the air environment, apart from classic military threats (Olszewski, 2002). In the context presented above, the use of aviation, identified with an air threat, should be viewed through the prism of means of air attack (Jałoszyński, 2008; Krawczyk, 2008).

Taking into account the above statements, according to J. Rajchel, air threats can be divided into four groups. The first is cases related to unintentional violations of airspace and air traffic rules in times of peace or crisis. Another group consists of the use of aircraft for criminal purposes, the most dangerous of which is widely understood air terrorism. Next, cases related to the intentional (deliberate) violation of the airspace of the state (alliance) in peacetime or crisis for the purpose of reconnaissance. The last group consists of actions aimed at an intentional (deliberate) threat from the air as part of military aggression against a given country (alliance) (Rajchel, 2012).

Also according to A. Radomyski,

it seems advisable to divide air threats into those that may occur in peacetime and those that may occur in an armed conflict. It can therefore be assumed that an air threat, i.e. a threat related to the possibility of using means of air attack, can be considered due to its military or non-military nature, including through the prism of the means used (Radomyski, 2015).

And so, the area of military air threat, which from the perspective of this study is crucial, is primarily war, including military operations. As part of these activities, the air opponent may carry out: aerial reconnaissance (provocation) of the air defense system (AD), shallow incursions into the country's airspace with limited forces and in a limited time, planned attacks on specific objects, devices, institutions in order to force specific actions or behaviors; retaliatory strikes against one of the parties to the conflict (where Poland may be a participant) and subsequent strikes on objects located in the border zone or in the interior of the country, depending on the stage of the armed conflict.

An interesting voice in the discussion on the issues raised, related to the military dimension of air security, are the statements of K. Dymanowski. In his opinion, threats from the air must be considered using three division criteria. According to the first, direct and indirect threats are distinguished (Dymanowski, 2011). Direct threats are identified with an attack by means of air attack. Indirect ones, on the other hand, relate to the violation of the air border of the state (alliance) and conducting reconnaissance activities. In turn, according to the next two criteria, the determinant of air threats is: the operational criterion describing the nature of the use of the enemy's means of air attack and the technical criterion describing the technologies used (Dymanowski, 2011).

The analysis of possible variants of the enemy's actions in a local conflict allows for the identification of specific types of incidents (Zdrodowski, 1998). These include, above all, strikes by single groups of aircraft in limited space, most often where our (allied) armed forces operate, as well as strikes by single groups of aircraft and destruction of selected objects (both military and specific civil infrastructure). In addition, simultaneous strikes from several directions on the grouping of our (allied) troops and massed strikes, spatially extensive, combined with an increase in the intensity of operations, e.g. of land forces. In addition, a mass air attack with other air means, e.g. unmanned aerial vehicles, and the possibility of using other means of air attack apart from aviation are mentioned. Such actions of the air enemy will be supplemented by the use of various airborne electronic warfare (EW) means and the performance of demonstration and reconnaissance flights with the use of EW means (Roslan, 2017).

It is worth emphasizing that a characteristic feature of a military threat to the air security of the state is the relatively short duration of the impact itself, in the order of several minutes. The location of the attacks will most often be selected with a very good

recognition of the stationary dislocation and spatial combat capabilities of the state's air defense forces and means. At the same time, the planner, organizer and operator will strive to impede the detection, recognition and tracking of the air target. Therefore, the potential adversary's aerial interaction will probably be carried out using means with a small effective reflection surface, flying at low and very low altitudes, at relatively high permissible cruising speeds. This means that today the issue of air threats should not be identified only with airplanes and helicopters, but the categories of air impact should be viewed in a broader spectrum (Radomyski, 2003). And so, air objects that may threaten the air safety of the state should be understood as all aircraft and other flying devices detected and observed in the national airspace.

In considering the issue of military threats to Poland's air security, reference can be made to the provisions of the 1971 "Instruction for the preparation and transmission of reports on the air situation". This document contains a provision that "all aircraft and other flying devices detected and observed in the air by radio engineering units are divided into air targets and own aircraft" (Szt. Gen. 604/71). Moreover, according to the provisions contained in the aforementioned Instruction, air targets include planes and other means of air attack of the enemy in the air, planes (flying devices) violating state borders and planes (flying devices) observed outside state borders. In addition, air targets include aircraft (flying devices) and radiolocation echoes reflected on the circle observation indicators, whose assignment has not been determined, and aircraft (flying devices) violating the established flight regime. The last group of air targets are planes (flying devices) simulating air opponents during manoeuvres, exercises and trainings, and planes performing control flights (Szt. Gen. 604/71).

Also interesting in this regard is the classification of means of air attack proposed by A. Radomyski, resulting from the division of air threats. Generally, the means of air attack can be divided into two groups, respectively corresponding to the division of threats into the so-called traditional (classic) and new - asymmetric, identified with air terrorism (Radomyski, 2013). It should be noted, however, that some military AAMs can also be used by terrorist groups, i.e. not only and exclusively during a military conflict (military operations). It is worth emphasizing that among the military means of air attack A. Radomyski mentions primarily ballistic missiles, aerostatic and aerodynamic flying devices and military space devices (Radomyski, 2015). These tools may pose serious threats to Poland's air safety.

The typology presented by K. Dobija also has an important cognitive value of the discussed issues. It presents a division taking into account the possible threat scenarios in contemporary and future warfare identified in allied documents and the National Security Strategy of the Republic of Poland and the Defense Strategy of the Republic of Poland. And so, the most probable is the use of manned aircraft, which include planes and helicopters of the air, land, sea and special forces. In addition, it mentions the possibility of using unmanned aerial systems and cruise missiles and tactical ballistic missiles, which are still in the arsenals of countries aspiring to be military powers (Dobija, 2013).

In the context of military threats to the air security of the state, one should also refer to the NATO document "Ground Based Air Defense Operations" (2020), which describes the activities for which the air defense systems of the alliance countries must be prepared in the future. Thus, among the potential air threats, apart from the above-mentioned threats, there are also threats created by: rockets, artillery and mortar shells; precision-guided munitions and various-purpose platforms that are lighter than air (Radomyski, 2015).

In general, the assessment of air threats in the military dimension made by experts indicate that the challenge for Poland's air defense in the near future may be primarily manned aircraft with increased tactical and technical capabilities in the field of reconnaissance and combating ground, surface and air objects. In addition, tactical ballistic missiles and surface-to-surface missile fire support systems; winged missiles and unmanned aerial vehicles and civil aviation aircraft used as an air attack tool (Standing Defence Plan SDP 10901 D).

4. ARSENAL OF CHALLENGES FOR STATE AIR SAFETY

In the arsenals of the countries of the Euro-Atlantic area there is a large fleet of combat aircraft prepared for use in the event of a high-intensity armed conflict. With regard to Poland's air security, a potential adversary may have third-generation (e.g. Su-25, Su-24M, Tu-22M3) and fourth-generation aircraft (e.g. Su-30, Su-32, Su-34) with reduced detecting and performing tasks in all weather conditions. Some of these aircraft are adapted to carry weapons with a range of up to 300 km (e.g. Kh-59ME) (The Military Balance, 2018). It is worth noting that long-range airborne means are expensive weapons, so they are expected to be used to attack heavily defended civilian and military objects of strategic and operational importance. Since Western and Russian solutions are used in the production of analogous agents by China, India and Iran, it cannot be ruled out that the availability of these agents will be much greater in the next decade (Kopp, 2015).

The above situation has certain consequences for Poland's air safety. Moreover, the evolution of military threats to air security forces fundamental changes in the organization and methods of counteracting such threats. The implications of this state of affairs for air defense have been noticed in many countries with significant military potential. Along with the increase in the range of air means of destruction, the range of anti-aircraft systems was increased to destroy carrier aircraft before the long-range means of destruction was launched. Such action turned out to be only partially effective, mainly due to the ratio of the cost of anti-aircraft systems to the price of means of destruction, as well as the limited mobility of anti-aircraft systems in relation to combat aircraft. At the same time, the countries that decided on such a solution equipped themselves with anti-aircraft systems with a range of about 300 km, thus moving the carrier aircraft beyond the scope of the task. In the case of countries with more limited military potentials and smaller territory, medium-range sets deployed as far as possible from the shield objects are used for this purpose. Both solutions take into account the need for additional object shielding using short-range and short-range kits (Roslan, 2018).

The assessment of Poland's air security should also take into account the ongoing proliferation of satellite-guided aerial weapons, which means that in the event of a high-intensity armed conflict in the Euro-Atlantic area, gliding bombs with a range of up to 100 km and a precision of less than 3 m can be used en masse. is less than \$20,000. For comparison, a dozen or so years ago a guided air-to-surface missile with similar parameters cost over PLN 250,000 USD (Hładij, 2018). The low unit cost and relatively high precision will imply the use of these means to attack communication facilities (airports and seaports, road and railway junctions). Apart from the USA, satellite-guided aviation weapons are now also produced by Russia, Israel, France and China, and in the near future an increase in the number of producers and users should be taken into account (Cliff, 2010), which in consequence has no impact on Poland's air safety.

In the context of military threats to Poland's air security, a noticeable trend is also the development of aerial means of destruction capable of long-term duty over the battlefield and attacking mobile objects with sub-missiles carried by homing to a source of thermal energy or guided by radar. An example of such a solution is the LOCAAS container that uses a laser radar to observe the battlefield and homing on objects with predefined characteristics. The proliferation of similar solutions may result in Poland's air defense measures being forced to fight the specialized means of destruction in the air.

When analyzing the factors influencing the creation of a threat to Poland's air security, one should also take into account the fact that the ever-longer list of countries in the Euro-Atlantic area with tactical ballistic missiles adapted to carry weapons of mass destruction requires treating this means of destruction as a real air threat. Some experts are of the opinion that this type of threat will only be dangerous for Poland in the event of a high-intensity armed conflict. Others say that also in peacetime, suggesting intensification of work under the so-called anti-missile shield. One of the concepts assumes the implementation of the ground-based theater air defense system – THAAD (*Terminal High Altitude Area Defense*). The system is intended to increase the ability to protect large urban agglomerations and large military formations by destroying missiles at distances of up to 200 km and at altitudes of up to 160 km (Zajas, 2018). The response of rocket manufacturers is to increase the resistance of warheads by armoring them and introducing maneuvering warheads after entering the atmosphere. The use of such a solution in the Russian ISKANDER missiles makes them a difficult target to destroy for current anti-aircraft defenses (Radomyski, 2010).

The experience of the recent wars in Iraq and Afghanistan, as well as in Lebanon in 2006, also brings added value to the assessment of military threats to the state's air security. And so, experience shows the massive use of unguided missiles as a means of influencing military and civilian objects. More than 4,000 unguided rocket attacks by the Hezbollah organization have disorganized Israel's functioning in a large part of its territory, directly threatening more than a million of its inhabitants. After Israel was unable to effectively defend its territory against Hezbollah attacks, the IRON DOME (Israeli air defense system developed by Rafael Advanced Defense Systems) system was developed and implemented. It seems that this system can be a point of reference for analyzing the needs related to the national air defense's ability to fight unguided missiles. Similar analyzes should be made in the case of eliminating the threat posed by multi-launch missile systems with capabilities similar to those of SMERCZ (up to 70 km) or MLRS (with ATACMS missiles up to 300 km). Undoubtedly, the above experiences should be taken into account in counteracting threats to Poland's air safety.

In addition, taking into account the changes in the military threats to the air security of the state, a significant increase in the number of cruise missiles themselves and the countries that will have them should also be taken into account. This threat is also noticed in Poland. The latest generation of winged missiles is characterized by a reduced effective radar reflection surface, a range of up to 1,500 km, a flight altitude of less than 50 m and a hit accuracy of several meters. Due to the high unit price, the winged missiles will be used mainly to attack civilian and military objects of strategic and operational importance. The introduction into the arsenals of the Euro-Atlantic area of less expensive winged missiles with a shorter range and reduced precision of destruction will expand the number and scope of the attacked objects (Jackson, 2008). The proliferation of winged missiles will undoubtedly force the acquisition of an appropriate number of anti-aircraft systems adapted to combat targets with a small effective reflective surface and flying at low altitudes.

Looking for some analogies with the protection of warship groupings against water-to-water guided missiles, the short-range systems seem to be the most effective in the fight against cruise missiles (Jackson, Frelinger, Lostumbo, Button, 2008).

Bearing in mind the military threats to the air security of the state, one should also take into account the continuous adaptation of unmanned aerial vehicles to carry out missions similar to those of combat aircraft. Based on the experience of other countries, it can be assumed that large unmanned aerial vehicles flying at an altitude of 5,000 to 10,000 m will be fought by medium-range sets, and smaller ones flying lower by short-range and short-range sets. The challenge for air defense will be hypersonic unmanned aerial vehicles moving at a speed of 4.5-6.5 Ma and flying at an altitude of 30,000 m (Unmanned Aircraft Systems Roadmap 200S-2030).

Equally significant threats to Poland's air safety may be generated by activities using small commercial unmanned aerial vehicles available immediately. The experience of the conflict in eastern Ukraine clearly shows that this kind of danger cannot be underestimated.

It should be noted that with regard to potential air security threats, the relatively attractive purchase price, low operating costs (compared to combat aircraft), long service life and high reliability mean that the use of unmanned aerial vehicles for terrorist attacks on civilian population centers cannot be ruled out. to blackmail state authorities. Such a threat materialized in 2006, when the Hezbollah organization used Iranian-made unmanned aerial vehicles to attack the Israeli capital from Lebanese territory. This forced the Israeli authorities to strengthen their air defense, which contributed to the multiplication of expenditures on the system of detecting air targets with a small effective radar reflection surface, flying at low altitudes (Fabian, 2022; Israel Intercept Two Attack UAV Launched by Hezbollah, 2018).

It should also be emphasized that in the literature on the subject there is a typology that takes into account new threats identified with the asymmetric air threat to the state. It mainly concerns terrorist attacks with the use of various types of aircraft structures (Fabian, 2022). On the other hand, many experts on the subject maintain unequivocally that military means of air attack are not intended only for operations in times of conflict, and vice versa. We can deal with asymmetric threats in the air environment not only in times of peace.

Making some generalizations, it can be concluded that military aviation in the future will operate planes and helicopters characterized, on the one hand, by high survivability on the battlefield, thanks to such features as difficult detectability, the ability to neutralize most air and anti-aircraft defense systems, the ability to identifying threats and having the means to eliminate them, and on the other hand having a technological advantage over the air opponent, based on highly effective means of detection, long-range weapons and resistance to possible interference.

In addition, aviation will undoubtedly be based on aerial robots performing reconnaissance and strike tasks in the enemy's territory, in an environment harmful to humans, and difficult detectability will remain an important feature of future aircraft and helicopters. Moreover, in tactics, technological surprise will probably be more important than plans and variants of use developed in the headquarters of the Air Force (Jeler, Roman, 2016). The implementation of air tasks will be accompanied by the principle of eliminating losses by reducing the risk of being shot down by ground-based air defense systems. The trend of raising the ceiling of aviation operations above the height marking the fire zone of short-range missile and artillery defense means impossible to eliminate will probably become permanent.

There are many indications that the aviation capabilities in cooperation with support systems (AWACS) will be developed in parallel, as well as the capabilities of independent operations using on-board systems for detecting, identifying and attacking targets in the air and on the ground. These systems will be characterized by high efficiency on the one hand, and discreet operation on the other. The basic requirement for both the aircraft and the weapons carried by them will be the ability to operate at any time of the year and 24 hours a day, at any latitude and with extremely high precision, regardless of weather conditions.

5. CONCLUSION

To sum up, the military air security environment of the state is an important area of national security identified with counteracting air threats, including, above all, means of air attack by the enemy. It should also be clearly articulated that air safety is not a static phenomenon, it is subject to constant evolution, both under the influence of changes taking place in the regional, national and international environment. Air security is becoming more and more interdisciplinary and multidimensional, its perception and understanding are changing, and the source of threats may be hostile military activities of states (alliances), terrorist groups or criminal elements. In addition, despite the visible link between air security in the military and civil spheres, especially in relation to threats, in practice this means the functioning of two separate subsystems of this security. In the military sphere, the air force plays a fundamental role in ensuring air security.

Threats to the air security of the state are a combination of destructive events that disrupt the established law and order of the state. Taking into account the changes in the political and military environment of Poland, air security threats to our country should be perceived in a dichotomous manner. One should be aware of the existence of conventional threats to Poland's air safety. Such threats may be caused by civil and military aircraft that may recognize and violate Polish airspace in times of peace and crisis. Among the classic threats to Poland's air security, one should also take into account the means of air attack, such as airplanes, unmanned aerial vehicles or winged missiles, which can affect specific objects in the territory of our country during an armed conflict. In assessing the state of Poland's air security, it is also necessary to take into account more extensively than before, asymmetric air threats identified with broadly understood air terrorism. A potential threat may also be the increasing access to unmanned aerial vehicle technologies and their illegal use.

REFERENCES

- Cliff, R. (2010). *The Development of China's Air Force Capabilities, CT-346, Testimony presented before the US-China Economic and Security Review Commission on May 20, 2010*. Santa Monica.
- Dobija, K. (2013). *Potrzeby doskonalenia systemu obrony powietrznej Polski z perspektywy ewolucji środków napadu powietrznego* [w:] Czupryński, K., Glen, A., Soroka, P., red., *System obrony powietrznej Polski*. Warszawa: AON.
- Dymanowski, K. (2011). *Klasyczne i nowe zagrożenia bezpieczeństwa z powietrza*. „Zeszyty Naukowe Wyższej Szkoły Oficerskiej Sił Powietrznych”, nr 2 (17)/2011.
- Fabian, E. *IDF shoots down 3 Hezbollah drones heading for Karish gas field* [Access: 19.10.2022]. Access on the internet: <https://www.timesofisrael.com/idf-says-it-shot-down-3-hezbollah-drones-heading-for-karish-gas-field/>.

- Gotowała, J. (2002). *Niepokój w powietrzu – wydolność współczesnych systemów zapobiegających szczególnym sytuacjom w locie*. Warszawa: AON.
- Hładij, A. *F-22 Raptor – sprostac wymogom współczesnych wojen* [Access: 24.08.2018]. Access on the internet: <https://www.defence24.pl/f-22-raptor-sprostac-wymogom-wspolczesnych-wojen>.
- Instrukcja sporządzania i przekazywania meldunków o sytuacji powietrznej. Sztab Generalny WP, sygn. Szt. Gen. 604/71.
- Israel Intercept Two Attack UAV Launched by Hezbollah* [Access: 12.08.2018]. Access on the internet: <http://defense-update.com/2006/08/israel-intercept-two-attack-uav.html>.
- Jackson, B.A., Frelinger, D.R., Lostumbo, M.J., Button, R.W. (2008). *Evaluating Novel Threats to the Homeland: Unmanned Aerial Vehicles and Cruise Missiles*. RAND Corporation.
- Jackson, B.A. (2008). *Novel threats to the homeland. Unmanned aerial vehicles and cruise missiles*. Santa Monica.
- Jałoszyński, K. (2008). *Współczesny wymiar antyterroryzmu*. Warszawa: Wydawnictwo Trio.
- Jeler, G.E., Roman, D. (2016). *The Graphite Bomb: an Overview of its Basic Military Applications*. "Review of the Air Force Academ", No. 1(31) [Access: 21.10.2018]. Access on the internet: http://www.afahc.ro/ro/revista/2016_1/Jeler_Roman_2016_1.pdf.
- Kopp, C., *Soviet/Russian Tactical Air to Surface Missiles Technical Report*, Air Power Australia [Access: 20.08.2015]. Access on the internet: <http://www.ausairpower.net/APA-Rus-ASM.html#mozTocId154704>.
- Krawczyk, P. (2008). *Terroryzm lotniczy*. Warszawa: AON.
- Lambeth, B.S. (2011). *Air operations in Israel's war against Hezbollah: learning from Lebanon and getting it right in Gaza*. Santa Monica.
- Olszewski, R. (2002). *Reagowanie na zagrożenia z powietrza w czasie pokoju* [w:] Gotowała, J., red., *Bezpieczne niebo*. Materiały z konferencji naukowej zorganizowanej przez Akademię Obrony Narodowej. Warszawa.
- Radomyski, A., red. (2015). *Podstawy obrony powietrznej*. Warszawa: AON.
- Radomyski A., Dobija, K. (2010). *Podręcznik przeciwlotnika*. Warszawa: AON.
- Radomyski, A. (2003). *Metodyka pracy sekcji OPL na stanowisku dowodzenia brygady zmechanizowanej (pancernej)*. Dodatek nr 8 do „Przeglądu Wojsk Lądowych”. Warszawa.
- Radomyski, A. (2015). *Współczesne zagrożenia powietrzne. Kontekst teoretyczny i praktyczny* [w:] Radomyski, A., red., *Podstawy obrony powietrznej*. Warszawa: AON.
- Radomyski, A. (2013). *Wyzwania i zagrożenia powietrzne Polski – determinanty nowego systemu obrony powietrznej* [w:] Czupryński, K., Glen, A., Soroka, P., red., *System obrony powietrznej Polski*, Warszawa: AON.
- Rajchel, J. (2012). *Aspekty polityczne bezpieczeństwa powietrznego Polski w XXI wieku, t. II, Zagrożenie bezpieczeństwa powietrznego Polski po roku 1999*. Dęblin: Wyższa Szkoła Oficerska Sił Powietrznych.
- Rajchel, J. (2015). *Bezpieczeństwo powietrzne na tle bezpieczeństwa narodowego* [w:] Wetoszka, A., Grenda, B., Truskowski, A., red., *Taktyka i dowodzenie w lotnictwie wojskowym*, Dęblin: Wyższa Szkoła Oficerska Sił Powietrznych.
- Roslan, G. (2018). *Obrona powietrzna. Militarne aspekty bezpieczeństwa powietrznego Polski*. Gdynia: Wydawnictwo BP.
- Roslan, G. (2017). *Ontologiczne uwarunkowania walki informacyjnej* [w:] Kisielnicki, J., Płusa, T., Rysz, S.J., Rajchel, J., Rajchel, K., red., *Rola i zadania administracji publicznej w zarządzaniu bezpieczeństwem w Polsce*. Rzeszów: Oficyna Wydawnicza PRZ.

- Rosłań G. (2014). *Rozpoznanie zagrożeń powietrznych. Wybrane problemy* [w:] Zieliński, M., Pączek, B., red., *Acti Labores Iucundi. Studia ofiarowane prof. L. Ciborowskiemu w siedemdziesiątą rocznicę urodzin*. Gdynia: Wydawnictwo J.P.
- Rosłań, G. (2012). *Współczesne i przyszłe zagrożenia powietrzne* [w:] Bogdański, P., Nowakowski, Z., Rajchel, K., red., *Ocena poziomu zagrożenia terroryzmem i organizacji systemu antyterrorystycznego w Polsce*. Warszawa: Wyższa Szkoła Policji w Szczytnie.
- Standing Defence Plan SDP 10901 D „Angry Hasp”. NATO Integrated Extended Air Defence (NATINEAD) in Allied Command Europe (ACE) – Final Draft, December 2002.
- The Military Balance, 2018.
- Unmanned Aircraft Systems Roadmap 200S-2030. Office of the Secretary of Defense, Washington D.C.200S, p.A-4-A-6.
- Zajas, S., red. (2018). *Studium przyszłości sił powietrznych. Synteza wyników badań*. Warszawa: AON.
- Zdrodowski, B., red. (1998). *Podręcznik obrona powietrzna*. Warszawa: AON.

Received: January 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.32

Mirosław SOŁTYSIAK¹
Dariusz ZAJĄC²

CHANGES IN THE FINANCIAL SITUATION OF MUNICIPALITIES WITHOUT POWIAT RIGHTS IN POLAND IN THE YEARS 2010-2021

The purpose of the paper is to identify and assess changes in the financial situation of municipalities without Polish towns in Poland against the background of the whole country in the years 2010–2021. The empirical material of the paper concerns both the whole country and all municipalities without poviats in Poland. The numerical data comes from the Warsaw Central Statistics Office Local Data Bank and cover the years 2010–2021. The collected and ordered empirical material was elaborated in descriptive, tabular, and graphical form, using the method of comparative analysis. Furthermore, a point evaluation of all diagnostic features was made that illustrates the financial situation of municipalities without cities in Poland against the background of the entire country for the years 2010–2021, which constitutes a new approach to the research problem undertaken in the article. The analysis of the statistical data confirmed the research hypothesis assuming that the presence of a city, especially a bigger one, is a significant factor positively and permanently influencing the financial situation of communes without cities with poviats in Poland.

Keywords: municipalities without cities with poviats in Poland, financial situation, changes in 2010–2021.

1. INTRODUCTION

The local government is a key institution responsible for the implementation of several tasks aimed at satisfying the needs of paramount importance to residents, as well as creating social and economic development in the regional and local system. The efficient implementation of tasks by local government units is largely dependent on effective financial management and their implementation is guaranteed by adequate economic potential. The quality of the system of local government finance, considered as a set of institutions, legal norms and tools defining the principles of local government financial management and serving to conduct it, is therefore of significant importance in this respect (Grzebyk, Sołtysiak, Stec, Zajac, 2020; Kata, Czudec, Zajac, Zawora, 2022).

¹ Mirosław Sołtysiak, Rzeszów University of Technology, Poland; e-mail: miroslaw@prz.edu.pl (corresponding author). ORCID: 0000-0003-3366-1537.

² Dariusz Zajac, University of Rzeszow, Poland; e-mail: dzajac@ur.edu.pl. ORCID: 0000-0001-7918-1366.

The financial management of local and regional authorities is a complex process, which is carried out in compliance with legislative requirements and which involves a variety of public tasks and financial operations relating to the various branches of public finance, as well as the use of different legal and financial methods and instruments. (Chojna-Duch 2003; Kosek-Wojnar, Surówka, 2007; Sołtyk, 2017, Sołtysiak, 2017; Sołtysiak, Suraj, 2018).

The financial management of the municipality involves the accumulation of income and revenue and the making of expenditures and outgoings in order to perform its own and commissioned tasks, whereby it determines its development and competitiveness and secures the fulfilment of the needs of its inhabitants. In the assessment of the income side of the municipal budget, it is important to examine changes in the volume of income, its dynamics and structure, as well as spatial variation. On the other hand, on the basis of an analysis of the expenditure side of the budget, it is possible to determine to what extent funds are allocated to solving current problems and to what extent to the promotion and development of the municipality and to improving and increasing its competitiveness (Podstawka, 2005; Hybel, 2010).

Investment expenditure in the financial management of municipalities, alongside their own income, is an important factor characterising their development possibilities. The wealth of municipalities clearly influences their investment opportunities. Units with a higher budget income per capita usually also have greater investment opportunities. In addition, a higher share of own income in total budget revenues allows municipalities to dispose of financial resources more freely and thus creates the possibility to allocate larger amounts to investments (Gołaszewska-Kaczan, 2005; Sobczyk, 2010; Błachut, Cierpień-Wolan, Czudec, Kata, 2018; Dziemianowicz, Kargol-Wasiluk, Bołtomiuk, 2018; Czudec, 2021; Szolno-Koguc, 2021).

The financial management of public sector units should be conducive to rational spending of public funds and making the right decisions in the management of these funds. A properly managed unit should, in the long term, develop the so-called “good indicators”, i.e. those that testify to its development. The notion of the financial situation (condition) of a local government unit deserves special attention, interpreted as the ability of the local government to balance recurring expenditure needs with recurring sources of income, while at the same time realising tasks arising from the law, which are intended to further multiply income and maximise public utility for its residents (Mrówczyńska-Kamińska, Kucharczyk, Średzińska, 2011; Adameczyk, Dawidowicz, 2016; Ociepa-Kicińska, Gorzałczyńska-Koczkodaj, Brzozowska, Pluskota, 2022).

When defining the financial situation (condition) of a local government unit, the following are most often emphasised: the ability to finance services on a continuous basis, the comprehensiveness of sound finances, the ability to repay liabilities, and the maintenance of the current level of services with resilience to the risks of changes over time. It seems that the most pertinent interpretation of the financial position (condition) of a local government unit refers to its ability to meet its financial obligations on time and to maintain services provided to the community (Filipiak, 2009; Dylewski, Filipiak, Gorzałczyńska-Koczkodaj; 2011, Filipiak, 2011; Wiśniewski, 2011; Kopyściański, Rólczyński 2014; Zawora, 2015; Adameczyk, Dawidowicz, 2016; Kotowska, 2016; Natrini, Taufiq Ritonga 2017, Ociepa-Kicińska, Gorzałczyńska-Koczkodaj, Brzozowska, Pluskota, 2022).

The financial position of a municipality is its financial state in a specific period of time, which is the result of its income and its structure, expenditure and its structure, the degree

of use of repayable funds, activity, and effectiveness in obtaining extra-budgetary funds, as well as efficiency in managing financial and material resources. Local authorities should care about the sound financial situation of a territorial unit, as it is a component of its competitiveness. In addition, it demonstrates, among other things, its ability to carry out its tasks, to achieve a balanced budget, as well as to increase its assets, and to realise and satisfy the needs of its inhabitants. Among the various determinants shaping the financial management of a local government unit, including its financial situation, the most general distinction is made between exogenous, endogenous, and mixed determinants. In addition, it is also possible to distinguish some common categories of them, which include social, economic, environmental, and spatial determinants, as well as institutional legal and political determinants. The catalogue of such factors is sometimes extended to include events whose effects cannot be predicted, but which may fundamentally alter the economic situation and operating conditions of local government units. This event in 2020 was the emergence of the COVID-19 pandemic. It should be added that an analysis of the financial situation of a local government unit provides information on its current and future asset and financial situation, and makes it possible to determine its opportunities and development prospects (Ossowska, Ziemińska, 2010; Zawora, 2015; Świrska, 2016; Bień, 2017; Standar, 2017; Stanny, Strzelczyk 2018; Wójtowicz 2018; Czudec 2021).

2. OBJECTIVE, EMPIRICAL, AND RESEARCH METHODS

The purpose of the article is to identify and assess changes in the financial situation of municipalities without county (powiat) cities in Poland against the background of the whole country in the years 2010–2021.

The article poses a research hypothesis, which assumes that the presence of a city, especially a larger one, is an important factor positively and permanently influencing the financial situation of municipalities without cities with county rights in Poland.

The empirical material of the article concerns both the whole country and all municipalities without powiat towns in Poland. The numerical data comes from the Warsaw Central Statistics Office Local Data Bank and cover the years 2010–2021. The collected and ordered empirical material was elaborated in descriptive, tabular, and graphical form, using the method of comparative analysis, with comparisons made in time and space.

In order to identify and assess the financial situation of municipalities without powiat cities in Poland, the following diagnostic characteristics illustrating it in the years 2010–2021 were analysed.

- total revenue of municipal budgets per capita (PLN);
- own revenue of municipal budgets per capita (PLN);
- share of own revenue in total revenue of communes' budgets (%);
- total expenditure of municipal budgets per capita (PLN);
- investment expenditures of municipal budgets per capita (PLN);
- share of investment expenditures in total expenditures of communes' budgets (%).

This paper evaluates the scores of all diagnostic characteristics that illustrate the financial situation of municipalities without cities with county rights in Poland against the entire country for the years 2010–2012, 2013–2015, 2016–2018, and 2019–2021. Individual diagnostic characteristics were compared with the average for the country, which was taken as 100 points, and their over or underweight in all municipalities without cities with county rights. Then all the points were summed up and the average was counted

(Figure 1). It should be emphasized that this represents a new approach to the research problem undertaken in the article.

3. RESEARCH RESULTS

A basic prerequisite for municipalities to carry out their statutory tasks effectively and efficiently is the provision of stable budget revenues, not only to finance current expenditure but also to enable new tasks of an investment nature to be undertaken (Czudec, 2021).

In municipalities without cities with poviats rights in Poland, the average value of total income of municipalities' budgets per capita increased in the years 2010–2021, similarly to the country as a whole. However, despite this, in municipalities without cities with poviats rights, the average value of total income of municipalities' budgets per capita in 2010–2021 is lower than the national average. It should be added that the variation of this characteristic between individual communes is quite high, but it decreases in the surveyed years, that is, the group of communes without cities with poviats rights becomes more homogeneous in this respect (Table 1).

In Poland, among all municipalities without cities with poviats rights, rural municipalities are clearly the most numerous (61.5%). While urban-rural municipalities account for 26.3% of all municipalities without cities with poviats rights in the region, the proportion of urban municipalities is by far the smallest at 12.2%.

Table 1. Total revenue of municipalities without poviats cities in Poland per capita compared to the whole country in the years 2010–2021 (in PLN)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	3448.3	3944.1	4970.2
Municipalities without cities with poviats rights in total, including:			
Mean	3055.3	3375.7	4404.0
Volatility coefficient V (%)	42.0	35.2	26.6
urban municipalities			
Mean	2988.3	3300.9	4325.4
Volatility coefficient V (%)	56.4	34.6	24.3
urban-rural municipalities			
Mean	2971.7	3283.9	4306.3
Volatility coefficient V (%)	31.2	22.9	15.9
rural municipalities			
Mean	3097.5	3423.1	4455.3
Volatility coefficient V (%)	42.9	38.6	29.9

Source: Local Data Bank of the Central Statistical Office in Warsaw.

Both in urban and urban-rural and in rural municipalities, the average value of the total income of municipalities budgets per capita increased in the years 2010–2021. However, the average value of the total income of municipalities budgets per capita in Poland in the years 2010–2021 varies in separate groups of municipalities without poviats cities. It is

highest in the rural municipalities group, where it is slightly higher than the average for all municipalities without cities with poviats rights. However, it is slightly lower and similar urban-rural and urban municipalities. It should be added that in all separate groups of municipalities without cities with poviats rights, the diversity of this feature between particular municipalities is quite high, but it is the smallest in the group of urban-rural municipalities. Furthermore, it is decreasing in the years surveyed, so all separate groups of municipalities without cities with county rights are becoming more homogeneous in this regard, especially the group of urban-rural municipalities (Table 1).

In municipalities without cities with poviats rights in Poland, the average value of the own income of municipal budgets per capita increased in the years 2010–2021, similar to the country as a whole. However, municipalities without cities with poviats rights are characterised by a significantly lower average value of own income of municipal budgets per capita in 2010–2021, compared to the average for the whole country. In turn, the variation of this characteristic between individual municipalities is high, but is decreasing in the years under study, so that the group of municipalities without cities with county rights becomes more homogeneous in this regard (Table 2).

Table 2. Own income of budgets of municipalities without poviats cities in Poland per capita compared to the whole country in 2010–2021 (in PLN)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	1824.9	2179.1	2536.3
Municipalities without cities with poviats rights in total, including:			
Mean	1206.3	1464.0	1697.4
Volatility coefficient V (%)	102.5	82.2	72.4
urban municipalities			
Mean	1706.0	1968.6	2309.6
Volatility coefficient V (%)	75.5	48.4	38.4
urban-rural municipalities			
Mean	1292.2	1539.4	1789.2
Volatility coefficient V (%)	66.5	46.1	43.7
rural municipalities			
Mean	1097.1	1357.2	1567.3
Volatility coefficient V (%)	121.0	100.0	88.1

Source: Local Data Bank of the Central Statistical Office in Warsaw.

In addition, it should be noted that both in urban, urban-rural and rural municipalities, the average value of own budgets of municipalities per capita increased in 2010–2021. The average value of the own budgets of municipalities per capita in Poland in the years 2010–2021, however, varies in separate groups of municipalities without cities with poviats rights. It is clearly the highest in the group of urban municipalities, where it exceeds the average for all municipalities without cities with poviats rights in Poland. In the group of urban-rural municipalities, the average value of own budgetary income per capita in the analyzed years is lower and comparable to the average for all municipalities without cities

with powiat rights. However, it is the lowest in rural municipalities. It should be added that in all separated groups of municipalities without cities with powiat rights, the differentiation of this feature between individual municipalities is large, with the greatest variation in the group of rural municipalities. In addition, it decreases in the analyzed years, i.e. all separated groups of municipalities without cities with powiat rights become more homogeneous in this respect, and this applies in particular to the group of urban and urban-rural municipalities (Table 2).

In municipalities without cities with county rights in Poland, the share of the own income in the total income of municipal budgets remains at a similar level in 2010–2021, that is, the same as in the whole country, except that it was highest in 2013–2015. However, municipalities without cities with county rights are characterised by a lower share of own income in total income of municipal budgets compared to the whole country in the years under study. The variation in this characteristic between individual municipalities is, in turn, quite high but decreased between 2010 and 2021, indicating that the group of municipalities without cities with county rights is becoming more homogeneous in this respect (Table 3).

Table 3. Share of own income in total income of budgets of municipalities without powiat rights in Poland compared with the whole country in the years 2010–2021 (in %)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	52.9	55.3	51.0
Municipalities without cities with powiat rights in total, including:			
Mean	38.4	42.3	37.6
Volatility coefficient V (%)	39.2	33.6	34.6
urban municipalities			
Mean	56.3	59.0	52.7
Volatility coefficient V (%)	18.6	15.6	16.2
urban-rural municipalities			
Mean	42.7	46.3	40.9
Volatility coefficient V (%)	31.8	27.2	28.2
rural municipalities			
Mean	34.1	38.2	34.0
Volatility coefficient V (%)	40.1	34.4	35.6

Source: Local Data Bank of the Central Statistical Office in Warsaw.

It should be added that, both in the urban, urban-rural, and rural municipalities group, the share of own revenue in total revenues of municipal budgets remains at a similar level in 2010–2021, with the highest in 2013–2015. Separate groups of municipalities without cities with powiat rights in Poland are clearly differentiated in terms of the share of own revenue in total revenues of municipal budgets in 2010–2021. It is definitely the highest in the group of urban municipalities, where it exceeds the average for all municipalities without cities with powiat rights in Poland, as well as the average for the whole country. In the group of urban-rural municipalities, the share of own revenue in the total revenue of

municipalities budgets in the years in question is lower, although it is also higher than the average for all municipalities without poviats towns, while it is clearly the lowest in the group of rural municipalities (Table 3).

The differentiation of this feature between individual municipalities is by far the smallest in the group of urban municipalities, i.e., this group of municipalities is the most homogeneous in this respect. In turn, in the group of urban-rural and rural municipalities, the differentiation of this feature between individual municipalities is quite large and similar to that for the entire group of municipalities without cities with poviats rights in Poland. It should be added that in all separate groups of municipalities without cities with poviats rights, it decreased in the years 2010–2021, which means that they are becoming more homogeneous in this respect, especially in the group of urban municipalities (Table 3).

Table 4. Total budget expenditures of municipalities without cities with poviats rights in Poland per capita against the background of the entire country in 2010–2021 (in PLN)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	3652.3	3940.6	4986.5
Municipalities without cities with poviats rights in total, including:			
Mean	3208.0	3351.1	4437.6
Volatility coefficient V (%)	35.1	34.5	25.9
urban municipalities			
Mean	3108.3	3279.5	4347.8
Volatility coefficient V (%)	47.6	39.0	26.6
urban-rural municipalities			
Mean	3137.0	3278.6	4353.4
Volatility coefficient V (%)	31.7	29.4	16.7
rural municipalities			
Mean	3250.4	3391.5	4485.2
Volatility coefficient V (%)	34.1	35.4	28.5

Source: Local Data Bank of the Central Statistical Office in Warsaw.

In addition, in all separate groups of municipalities without cities with poviats rights, i.e., both in urban, urban-rural and rural municipalities, the average value of total expenditure per capita of municipalities budgets increased in 2010–2021, but after that is why she is different. The highest average value of total budget expenditure per capita in the years 2010–2021 is in the group of rural municipalities, where it is slightly higher than the average for all municipalities without cities with poviats rights in Poland. However, it is lower and similar in the group of urban-rural and urban municipalities. On the other hand, in all separated groups of municipalities without cities with poviats rights, the differentiation of this feature between individual municipalities is quite large, with the smallest difference in the group of urban-rural municipalities. Furthermore, it decreases in the analyzed years, so all the separated groups of municipalities without cities with poviats rights become more

homogeneous in this regard, especially in the group of urban-rural municipalities (Table 4).

As in the whole country, also in municipalities without cities with poviatic rights, the average value of investment expenditures of municipalities budgets per capita remained at a similar level in 2010–2018, while it increased quite clearly in 2019–2021. Municipalities without cities with poviatic rights in Poland are characterized by a lower average value of investment expenditure per capita of municipalities budgets in 2010–2021, compared to the national average. It should be added that the differentiation of this characteristic between individual municipalities is large, but clearly decreased in 2019–2021, that is, the group of municipalities without cities with poviatic rights became more homogeneous in this respect (Table 5).

Table 5. Investment expenditures in the budgets of municipalities without cities with poviatic rights in Poland per capita against the background of the entire country in 2010–2021 (in PLN)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	790.0	719.0	757.3
Municipalities without cities with poviatic rights in total, including:			
Mean	732.5	595.4	699.3
Volatility coefficient V (%)	76.8	90.4	69.4
urban municipalities			
Mean	696.8	535.0	684.1
Volatility coefficient V (%)	127.2	114.0	85.1
urban-rural municipalities			
Mean	702.6	561.5	678.3
Volatility coefficient V (%)	78.5	97.6	52.4
rural municipalities			
Mean	749.4	618.5	710.0
Volatility coefficient V (%)	66.6	84.2	72.3

Source: Local Data Bank of the Central Statistical Office in Warsaw.

In addition, also in all separate groups of municipalities without cities with poviatic rights in Poland, i.e. in urban, urban-rural and rural municipalities, the average value of investment expenditures of municipalities budgets per capita remained at a similar level in 2010–2018, while it increased quite clearly in 2019–2021. Separated groups of municipalities without cities with poviatic rights, however, are differentiated in terms of the average value of investment expenditures per capita of municipalities budgets in 2010–2021. Because it is the highest in the group of rural municipalities, where it slightly exceeds the average for all municipalities without cities with poviatic rights. However, it is lower and similar in the group of urban-rural and urban municipalities. The differentiation of this feature between individual municipalities is, in turn, high in all separated groups of municipalities without cities with poviatic rights. However, it clearly decreased in the urban-rural municipality group in 2016–2021, as well as in the group of urban and rural

municipalities in 2019–2021. Therefore, all separated groups of municipalities without cities with poviatic rights in Poland have become more homogeneous in this respect, and this applies, in particular, to urban-rural and urban municipalities (Table 5).

Analyzing the share of investment expenditure in the total expenditure of the budgets of municipalities without cities with poviatic rights in Poland, it must be stated that it decreased in 2010–2021 and is similar to the average for the entire country. The differentiation of this characteristic between individual municipalities without cities with poviatic rights is, in turn, quite large and remains at a similar level in the analyzed years (Table 6).

In addition, it should be noted that there are no major differences in this respect between the separated groups of municipalities without cities with poviatic rights in Poland. Because both in the urban, urban-rural and rural municipalities group, the share of investment expenditure in the total expenditure of municipal budgets decreased in the years 2010–2021 and is similar in all groups of municipalities, and the differentiation of this feature between individual municipalities is quite high in all groups of municipalities and remains at a similar level in the analyzed years (Table 6).

Table 6. The share of investment expenditures in the total expenditures of the budgets of communes without cities with poviatic rights in Poland against the background of the entire country in 2010–2021 (in %)

Description	Years		
	2010–2012	2013–2015	2016–2018
Poland			
Mean	21.6	18.2	15.2
Municipalities without cities with poviatic rights in total, including:			
Mean	21.7	16.8	15.2
Volatility coefficient V (%)	36.9	44.4	41.4
urban municipalities			
Mean	20.6	15.1	14.8
Volatility coefficient V (%)	37.7	46.8	39.6
urban-rural municipalities			
Mean	21.2	16.1	15.1
Volatility coefficient V (%)	36.7	44.4	40.8
rural municipalities			
Mean	22.1	17.3	15.3
Volatility coefficient V (%)	36.8	43.7	41.9

Source: Local Data Bank of the Central Statistical Office in Warsaw.

Figure 1 presents the results of the score assessment regarding the financial situation of municipalities without cities with poviatic rights in Poland against the background of the entire country for the years 2010–2021. It should be noted that there have been no major changes in this regard in the analyzed years. Namely, municipalities without cities with poviatic rights in Poland in the entire period covered by the research are characterized by an average worse financial situation, compared to the average for the entire country, especially in the years 2013–2015. Furthermore, there are no significant differences in terms of

financial situation between urban, urban-rural, and rural municipalities. Nevertheless, it should be added that the best financial situation in the analyzed years is characterized by urban municipalities, and the worst by rural municipalities, with the exception of the years 2019–2021, where their financial situation is on average very similar or even slightly better than in urban municipalities rural. Therefore, this confirms the research hypothesis presented in the article, which assumes that the presence of a city, especially a larger one, is an important factor positively and permanently affecting the financial situation of municipalities without cities with poviats rights in Poland.

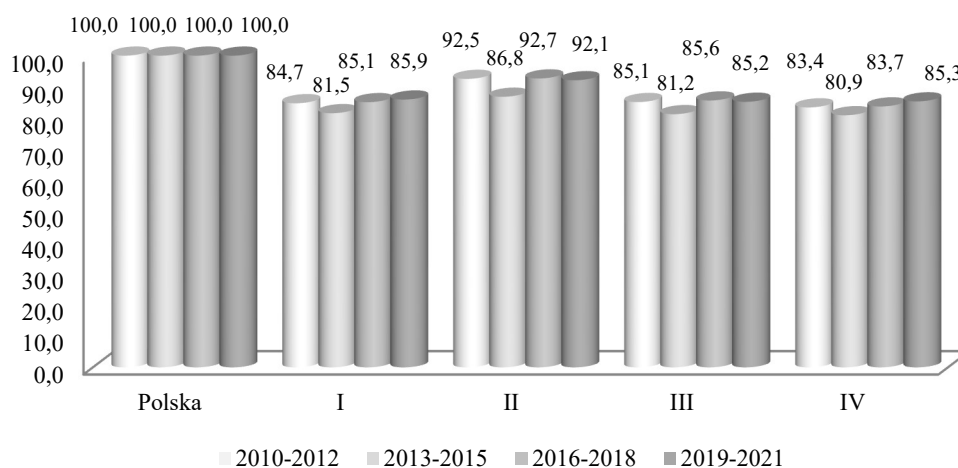


Figure 1. Assessment of the score of the financial situation of municipalities without cities with poviats rights in Poland in the background of the entire country for the years 2010–2021 (Poland = 100.0 points)

Explanations: I – communes without cities with poviats rights in total, II – urban communes, III – urban-rural communes, IV – rural communes.

Source: Local Data Bank of the Central Statistical Office in Warsaw.

4. CONCLUSIONS

Both in the entire country and in municipalities without cities with poviats rights, and in all their groups distinguished in the article, the average value of total income and expenditure of municipalities budgets per capita increased in the years 2010–2021. In municipalities without cities with poviats rights, the average value of total revenues and expenditures per capita of municipalities budgets in the analyzed years is, however, lower than the national average, and it is the highest in the group of rural municipalities. The differentiation of this feature between individual municipalities is quite large, but it decreases in the analyzed years, which proves that the group of municipalities without cities with poviats rights becomes more homogeneous in this respect, especially in urban-rural municipalities.

As in the whole country, also in municipalities without cities with poviats rights and in all their separate groups, the average value of own budgets of municipalities per capita increased in the years 2010–2021, but it is clearly lower in these municipalities compared to the entire country, especially in rural areas. The differentiation of this feature between

individual municipalities is, in turn, large, but it decreases in the analyzed years, so the group of municipalities without cities with poviats rights becomes more homogeneous in this respect, and this applies in particular to the group of urban and urban municipalities rural.

Both in the whole country and in municipalities without cities with poviats rights, and in all their separate groups, the share of own revenues in total municipalities budget revenues remains at a similar level in 2010–2021, with the highest in 2013–2015. In municipalities without cities with poviats rights, the share of own income in the total income of municipalities budgets in the analyzed years is lower than the national average, with the highest share in the group of urban municipalities, where it even exceeds the average for the entire country, and it is definitely the lowest in the group of rural municipalities. The differentiation of this feature between individual municipalities is quite large, but it decreased in the analyzed years, which proves that the group of communes without cities with poviats rights in Poland is becoming more homogeneous in this respect, especially in the group of urban municipalities.

As in the whole country, also in municipalities without cities with poviats rights and in all their separate groups, the average value of investment expenditures of municipalities budgets per capita remained at a similar level in 2010–2018, and increased quite markedly in 2019–2021. However, municipalities without cities with poviats rights in Poland are characterized by a lower average value of investment expenditure per capita of commune budgets in the analyzed years, compared to the average for the entire country, with the highest value in the group of rural municipalities, where it slightly exceeds the average for all municipalities without cities with poviats rights. The differentiation of this feature between individual municipalities is large, but it clearly decreased in 2019–2021, and in the group of urban-rural municipalities in 2016–2021, i.e. the group of municipalities without cities with poviats rights in Poland, became more homogeneous in this respect, especially in urban-rural and urban municipalities.

Both in the whole country and in municipalities without cities with poviats rights, and in all their separate groups, the share of investment expenditure in the total expenditure of municipalities budgets decreased in the years 2010–2021 and is similar. However, the differentiation of this feature between individual municipalities is quite large and remains at a similar level in the analyzed years, and this applies to the entire group of municipalities without cities with poviats rights and to the group of urban, urban-rural and rural municipalities.

The score assessment of the financial situation of municipalities without cities with poviats rights in Poland against the background of the entire country for the years 2010–2021 showed that it is slightly worse in these municipalities compared to the whole country, especially in rural municipalities. On the other hand, the presence of one city, especially a larger one, is an important factor positively and permanently influencing the financial situation of these municipalities, which confirms the research hypothesis presented in the article.

It should be added that the presented results of the statistical data analysis provide relevant and up-to-date knowledge that may be useful primarily to local government officials responsible for public local government finances and the possibilities and directions of local socio-economic development of municipalities without cities with poviats rights in Poland. At the same time, it justifies the need to continue similar research and analyses.

REFERENCES

- Adamczyk, A., Dawidowicz, D. (2016). *Wartość informacyjna wskaźników oceny kondycji finansowej jednostek samorządu terytorialnego*. „*Ekonomiczne Problemy Usług*”, 25. DOI: 10.18276/epu.2016.125-02
- Bień, W. (2017). *Ocena kondycji finansowej gmin województwa małopolskiego w latach 2007–2016*. „*ZN UE w Katowicach. Współczesne Finanse*”, 345.
- Błachut, B., Cierpiął-Wolan, M., Czudec, A., Kata, R. (2018). *Wydatki inwestycyjne jednostek samorządu terytorialnego a rozwój przedsiębiorczości w regionie Polski południowo-wschodniej*. Rzeszów: Urząd Statystyczny w Rzeszowie.
- Chojna-Duch, E. (2003). *Polskie prawo finansowe. Finanse publiczne*. Warszawa: Lexis Nexis.
- Czudec, A. (2021). *Finanse jednostek samorządu terytorialnego w okresie pandemii*. „*Finanse Komunalne*”, 5.
- Dylewski, M., Filipiak, B., Gorzałczyńska-Koczkodaj, M. (2011). *Analiza finansowa budżetów jednostek samorządu terytorialnego*. Municipium.
- Dziemianowicz, R., Kargol-Wasiluk, A., Bołtromiuk, A. (2018). *Samodzielność finansowa gmin w Polsce w kontekście koncepcji good governance*. „*Optimum. Economic Studies*”, 4(94). DOI: 10.15290/oes.2018.04.94.16.
- Filipiak, B., red. (2009). *Metodyka kompleksowej oceny gospodarki finansowej jednostki samorządu terytorialnego*. Warszawa: Difin.
- Filipiak, B. (2011). *Finanse samorządowe. Nowe wyzwania bieżące i perspektywiczne*. Warszawa: Difin.
- Gołaszewska-Kaczan, U. (2005). *Partnerstwo publiczno-prywatne a atrakcyjność regionu* [In:] A. Kopczyk, A., Proniewski, M., ed., *Atrakcyjność inwestycyjna regionu*. Białystok: Wyższa Szkoła Finansów i Zarządzania.
- Grzebyk, M., Sołtysiak, M., Stec, M., Zając, D. (2020). *Spoleczne, ekonomiczne i środowiskowe uwarunkowania gospodarki finansowej samorządu lokalnego (przykład województwa podkarpackiego)*. Poznań: Bogucki Wydawnictwo Naukowe.
- Hybel, J. (2010). *Regionalne zróżnicowanie sytuacji finansowej gmin w Polsce w latach 2005–2009*. „*Zeszyty Naukowe SGGW w Warszawie. Ekonomika i organizacja gospodarki żywnościowej*”, 86.
- Kata, R., Czudec, A., Zając, D., Zawora, J. (2022). *Gospodarka finansowa jednostek samorządu terytorialnego – wybrane zagadnienia*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego.
- Kopyściański, T., Rólczyński, T. (2014). *Analiza wskaźników opisujących sytuację finansową powiatów w województwie dolnośląskim w latach 2006–2012*. „*Studia Ekonomiczne*”, 206.
- Kosek-Wojnar, M., Surówka, K. (2007). *Podstawy finansów samorządu terytorialnego*. Warszawa: PWN.
- Kotowska, E. (2016). *Przesłanki racjonalnej polityki budżetowej w jednostkach samorządu terytorialnego* [In:] Gołębiowska, A., Zientarski, P.B., eds., *Funkcjonowanie samorządu terytorialnego – uwarunkowania prawne i społeczne*. Warszawa: Kancelaria Senatu RP.
- Mrówczyńska-Kamińska, A., Kucharczyk, A., Średzińska, J. (2011). *Analiza finansowa w jednostkach samorządu terytorialnego na przykładzie miasta i gminy Środa Wlkp.* *Zeszyty Naukowe SGGW w Warszawie. „Ekonomika i Organizacja Gospodarki Żywnościowej*”, 89.

- Natrini, N.D., Taufiq Ritonga, I. (2017). *Design and Analysis of Financial Condition Local Government Java and Bali (2013–2014)*. SHS Web of Conferences, 34: 03003 DOI: 10.1051/shsconf/20173403003
- Ociepa-Kicińska, E., Gorzałczyńska-Koczkodaj, M., Brzozowska, K., Pluskota, P. (2022). *Ocena kondycji finansowej jednostek samorządu terytorialnego w obliczu pandemii COVID-19 na przykładzie województw samorządowych w Polsce. „Rozwój Regionalny i Polityka Regionalna”*, 59.
- Ossowska, L., Ziemińska, A. (2010). *Kondycja finansowa gmin wiejskich i miejsko-wiejskich województwa pomorskiego. „Journal of Agribusiness and Rural Development”*, 4(18).
- Podstawka, M. (2005). *Podstawy finansów. Teoria i praktyka*. Warszawa: Wydawnictwo SGGW.
- Sobczyk, A. (2010). *Rozwój lokalny – wybrane problemy finansowania. „Zeszyty Naukowe SGGW w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej”*, 81.
- Sołtyk, P. (2017). *Uwarunkowania efektywności systemu kontroli gospodarki finansowej jednostek samorządu terytorialnego. „Studia i Prace WNEiZ US”*, 47/3.
- Sołtysiak, M. (2017). *Budżet jednostki samorządu terytorialnego a wiedza i aktywność lokalnej społeczności. „Humanities and Social Sciences”*, Vol. XXII, 24 (4/2017).
- Sołtysiak, M., Suraj, M. (2018), *Budget of local government unit versus state of art and engagement of young generation of Poles [In:] Majerova, I., ed., Proceedings 16th International Scientific Conference “Economic Policy in the European Union Member Countries”*. Silesian University.
- Standar, A. (2017). *Ocena kondycji finansowej gmin oraz jej wybranych uwarunkowań na przykładzie województwa wielkopolskiego przy wykorzystaniu metody TOPSIS. „Więź i Rolnictwo”*, 2(175).
- Stanny, M., Strzelczyk, W. (2018). *Kondycja finansowa samorządów lokalnych a rozwój społeczno-gospodarczy obszarów wiejskich. Ujęcie przestrzenne*. Warszawa: Scholar.
- Szołno-Koguc, J. (2021). *Samodzielność dochodowa jednostek samorządu terytorialnego – aspekty teoretyczne. „Studia BAS”*, 1(65). DOI: 0.31268/StudiaBAS.2021.02.
- Świrska, A. (2016). *Czynniki determinujące efektywne zarządzanie finansami samorządowymi (na przykładzie gmin powiatu siedleckiego). „Polityki Europejskie. Finanse i Marketing”*, 16(65).
- Wiśniewski, M. (2011). *Wyznaczniki sytuacji finansowej gminy. Ocena istotności za pomocą analizy skupień. „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu. Nauki o Finansach”*, 9(215).
- Wójtowicz, K. (2018). *Znaczenie wybranych czynników ekonomiczno-społecznych dla kształtowania stabilności fiskalnej gmin miejskich w Polsce. „Acta Universitatis Lodzianis. Folia Oeconomica”*, 334(2).
- Zawora, J. (2015). *Analiza wskaźnikowa w procesie zarządzania finansami samorządowymi. „Zarządzanie Finansami i Rachunkowość”*, 4.

Received: December 2022
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.33

Hanna SOMMER¹
Grzegorz ZAKRZEWSKI²

A CULTURE OF SECURITY VERSUS DIGITAL EXCLUSION AS A FORM OF SOCIAL EXCLUSION

This article contains a brief description of the creation of an artificial environment, which is the outcome of the evolution of humankind's natural environment. Its dynamic development is associated with anthropopressure. A sizeable share of scientists agree that we live in a new geological epoch called the Anthropocene (a term proposed in 2000 by Paul Crutzen, an atmospheric chemist), in which humans exert an increasingly noticeable impact on the entire planet and "reach out" into space. The modern human being no longer exists in their natural human environment, but dwells in the "technicized" one. In this article, the authors present the issues of social exclusion through the prism of newly created artificial human environments. They will look at the technicized human environment through the prism of security culture issues, of which exclusion, including digital exclusion, is one. The factor determining the functioning of ecosystems, and thus maintaining the phenomenon of life on Earth and then in Space, is the flow of energy and matter. Everything occurs in time; this very phenomenon is responsible for the aging of biocenosis, which in turn is subjected to exclusion processes in the habitat.

Keywords: ecosystem, digital exclusion, security culture

1. INSTEAD OF THE INTRODUCTION

Human civilization is developing in an uncontrollable manner. Achievements being of importance to science are mixed with charlatany while interference with human nature takes on indeterminate dimensions and forms. The digitisation of life is experiencing a real renaissance (Sommer 2006).

Technological development and the spread of the Internet have resulted in the transfer of many forms of social life into the digital space. As a result, for various reasons, part of the society remains marginalised in the course of these changes, leading to the emergence of the phenomenon called "digital exclusion".

¹ Hanna Sommer, Rzeszów University of Technology, Poland; e-mail: hansom@prz.edu.pl (corresponding author). ORCID: 0000-0001-7208-7641.

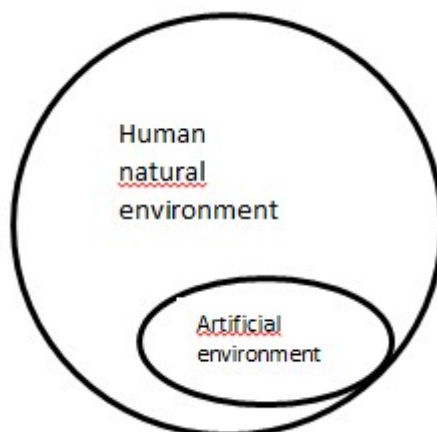
² Grzegorz Zakrzewski, Pomeranian Higher School in Starogard Gdanski, Poland; e-mail: grzegorz.zakrzewski@psw.stg.pl. ORCID: 0000-0002-0945-5322.

At every stage of the development of human civilization there used to be, there are and probably there will always be excluded groups inhabiting their own ecosystems. H. Sommer, G. Zakrzewski write:

The introduction of the concept of “ecosystem” by Tansey, as a basic, ecological functional and spatial unit in 1935, was a turning point in the development of ecology. An ecosystem is an area with relatively homogeneous abiotic conditions (biotope), occupied by a corresponding set of species associated with trophic and paratrophic dependencies, through which a stream of energy and matter flows. A technically developed area can also be considered an ecosystem if it meets the above-mentioned conditions. According to this definition an ecosystem is the result of two components remaining in close relationship:

- **inanimate (biotope, also called habitat)**, which consists of soil, water, and air, with all their physicochemical properties, and climate;
- **animate (biocenosis)**, consisting of the combination of species native to a given biotope in specific geographical conditions (Sommer, Zakrzewski, 2017a).

It can be stated with utmost resolve that the contemporary human being hardly exists in the natural environment and mostly functions within an artificial human-made environment. Figure 1 presents the state existing when the human being appeared on Earth and began to transform it. The situation has been virtually reversed for almost half a century. The natural environment has been “replaced” with an artificial one, in which ever greater changes begin to take place, exerting an impact on the habitat which scientists struggle to predict. Today, the issues of the security culture still do not enjoy sufficient priority. Zoology is still unable to win the recognition of a broader audience, despite all the disciplines ranging from philosophy, through exact sciences, to finally technical studies are combined in it, as if in a lens (see more: Sommer, Zakrzewski, 2017b).



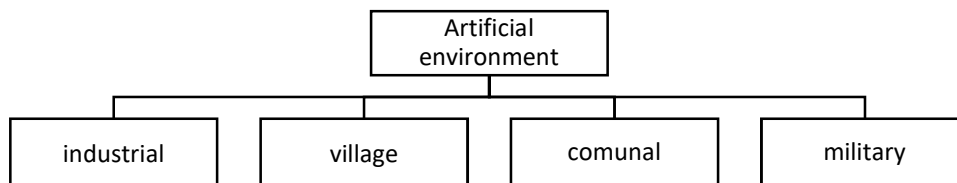
Picture 1. Split of human natural environment

Source: authors' own research.

Changes to the natural habitat of humans, turning it into a heavily technicized one caused dynamic civilisational development and had side effects in the form of exclusion suffered both by individuals and social groups. H. Sommer, H. Sommer, G. Zakrzewski write:

From the classical definition of the habitat, one can easily formulate the definition of the technicized habitat, i.e., one which is a creation of human thought and achievements of engineering and is inhabited by people (Sommer, Sommer, Zakrzewski 2018).

The division into four types of “artificial environment”, which is shown in Figure 2, seemed quite obvious.



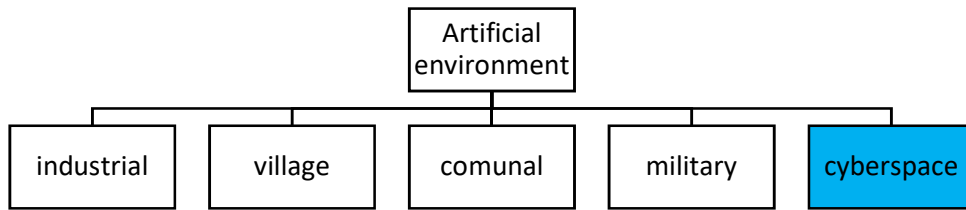
Picture 2. Four types of artificial environment

Source: (Sommer, Zakrzewski, 2017c).

H. Sommer, G. Zakrzewski write:

When exploiting the planet Earth, the modern human being no longer dwells in the natural environment of humankind (with only enclaves remaining of the former one), but in the “humanized” environment (anthropopressure environment), in which he carries out the processes of protection and shaping using the most advanced technologies and scientific research from various fields, ranging from natural sciences, economics, to philosophical. According to some scientists, we have entered a new geological epoch, called the Anthropocene (a term proposed by Paul Crutzen, atmospheric chemist in 2000), when people exert an increasingly noticeable impact on the entire planet (Sommer, Zakrzewski 2017a).

Every environment alters the human being-environment system. Following armed conflicts, a military environment further corrupts humanity. The technicization of manufacturing processes, initiated by the application of the steam engine, changed social processes once and for all. The age of steam did not sustain the development of human civilisation for long. It was superseded by electricity in a natural and swift manner, with electronics gripping the reigns soon after. The existence of the human being within the cyberspace environment is a fact, even without wide acceptance of said fact. In Figure 3, the authors propose to incorporate cyberspace into the artificial environment.



Picture 3. Proposed split of artificial environment

Source: authors' own research.

Cyberspace is a product of the last decades and sprung up right before our eyes. That is why it is so difficult to postulate its full definition. For the purposes of this article, the authors quote M. Grzelak K. Liedel:

Even reconciling the definition of the concept of cyberspace alone poses a problem. In one of its publications the NATO Cooperative Cyber Defence Centre of Excellence, (CCDCoE) in Tallin, the capital of Estonia, proposes a definition stating that cyberspace is a “time-dependant collection of interconnected information systems, as well as people/users interacting with those systems”. CCDCoE stresses that the multitude of functional definitions, which, however, often describe only hardware components of cyberspace with the possible inclusion of software, often ignore the human being as a user interacting with cyberspace, thus becoming a part thereof (Grzelak, Liedel 2012).

2. HUMANIZATION OF TECHNOLOGY AND TECHNICIZATION OF HUMANITIES

The staggering pace of technology development not only influenced the nature of our civilization, but also radically changed our reality. Modern civilization can be described as technicized, automated and digitalized. New technologies not only supplement the human being but, in many cases, replace them altogether. However, a technicized world may lead to the narrowing of intellectual perspectives, impoverishment of language, uniformization of tastes and standardization of imagination. A humanistic approach to modern technical civilization should strive for a kind of development which will not be used against humanity and its safe existence (Sommer 2017).

According to Klaus Schwab, the world changing under the influence of technology, in which devices communicate with people is a sign of the new revolution - the so-called fourth industrial revolution. The potential to strengthen the position of both individuals and groups lies within the fourth industrial revolution, as it creates new possibilities for the economic growth, as well as social and individual development. However, it may also lead to marginalisation of some groups, exacerbation of inequality, and creation of new threats to security (Schwab 2016a).

As noted by Melvin Kranzber, technology is neither bad nor good, nor is it neutral, and technological development has significant consequences for the environment, society and people, which go far beyond the goal of introducing technological devices and practices associated with them (Kranzberg 1986).

During the process of upbringing and education, people gain the ability to navigate the technicized environment. This process is natural and proceeds along a timeline. Exclusion is a phenomenon that occurs when something takes the human population by surprise. The introduction of the production (assembly) lines (See more: FORD car assembly lines, <https://www.ford.pl/swiat-forda/o-firmie/historia>) by **Henry Ford** at the beginning of the 20th century is considered to have been the beginning of one of the greatest industrial revolutions, which resulted in widespread unemployment amongst highly skilled craftsmen.

Nowadays, cyberculture is an everyday reality and it is irreversible. New ways of implementation and digital opportunities, which appear increasingly often, are supposed to make our lives easier, but is it really so in every case? With age, adapting to changes comes with an ever-greater difficulty. Economic conditions, as well as health issues, to some extent, are also an important factor causing social exclusion.

The ways in which elderly people evaluate cyber exclusion will be the subject of this research.

3. METHODOLOGY AND RESULTS OF THE RESEARCH

Research methods constitute a general system of rules which pertain to the organization of specific research activities, i.e., various cognitive and practical operations, the order of their application and measures aimed at achieving the adopted research objective. In this study, the research will focus on the following problem:

Do elderly people feel digitally excluded?

In order to conduct research effectively, apart from formulating the research problem, a hypothesis must be put forth. The following hypothesis can be formulated as a response to the main problem:

It can be assumed that the surveyed elderly people feel digitally excluded to a large extent.



Picture 4. Place of survey

Source: authors' own research.

The research was carried out in July 2022 at Inowrocław health resort. 70 women and 52 men staying and receiving treatment at the following health resorts: Pod Tężniami, Kujawiak, Energetyk, Modrzew and Oaza participated in the research. The survey was carried out with the use of a questionnaire containing 12 questions. The questionnaires were handed out to people who were walking in the vicinity of graduation towers in the afternoon and expressed their willingness to participate. The respondents came from various parts of our country. For the purpose of this article Poland was divided into quarters in Figure 4. The figures given here denote the number of women in the numerator and the number of men living in individual regions of the country in the denominator.

The first chart depicts the level of the elderly citizens' digital competence estimated by the respondents themselves.

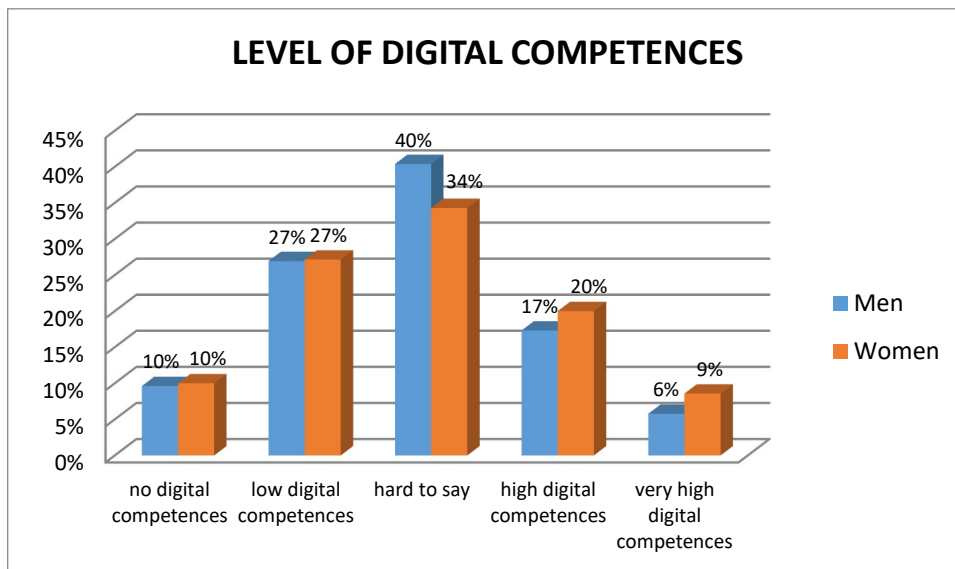


Chart 1. Level of digital competences

Source: authors' own research.

It may be puzzling that the majority of the respondents were unable to determine their digital competence; specifically, 40% of men and 34% of women. As many as 27% of both women and men define their digital competence as low and 10% believe that they have no digital competence. On the other hand, 20% of women and 17% of men believe that they possess high digital competence, and 9% of women and 6% of men believe that their digital competence is at a very high level.

In the second chart, the respondents answered whether they used a payment card.

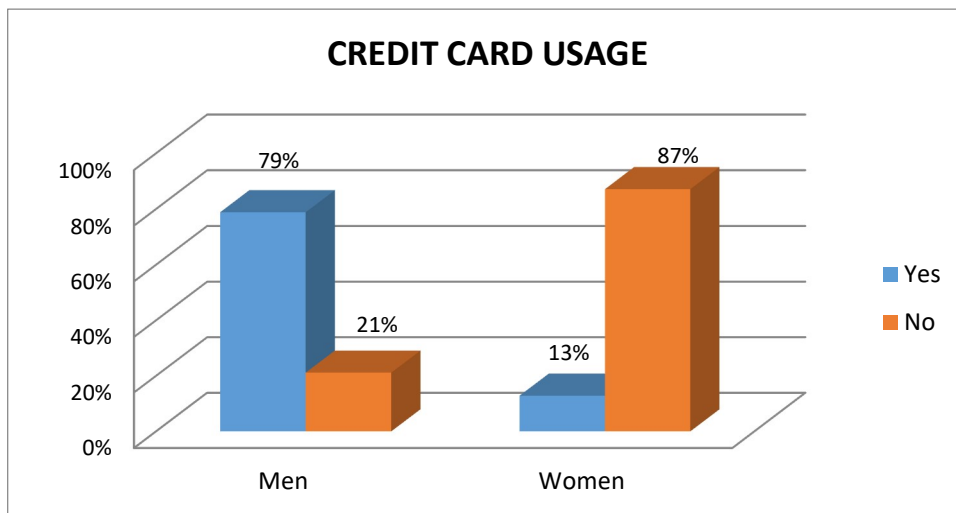


Chart 2. Credit card usage

Source: authors' own research.

Chart 2 depicts the scale of using payment cards among seniors. Here, it can be stated that the vast majority of men (79%) use payment cards. What may come as a surprise is a very low percentage of women (13%) who have plastic money.

The next chart (3) presents the percentage of the older generation that uses the Internet.

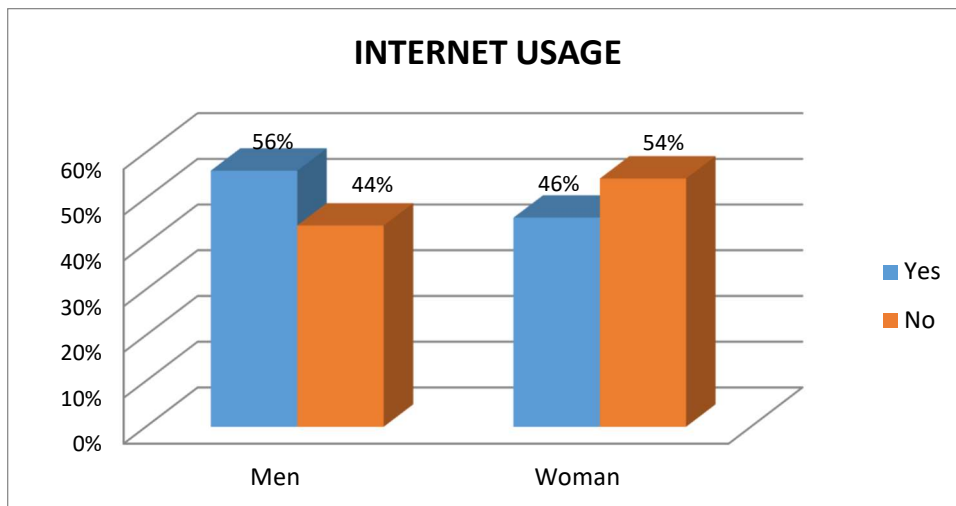


Chart 3. Internet usage

Source: authors' own research.

A large percentage of elderly people, both men (56%) and women (46%) use the internet.

Chart 4 illustrates what type of phone the elderly citizens have.

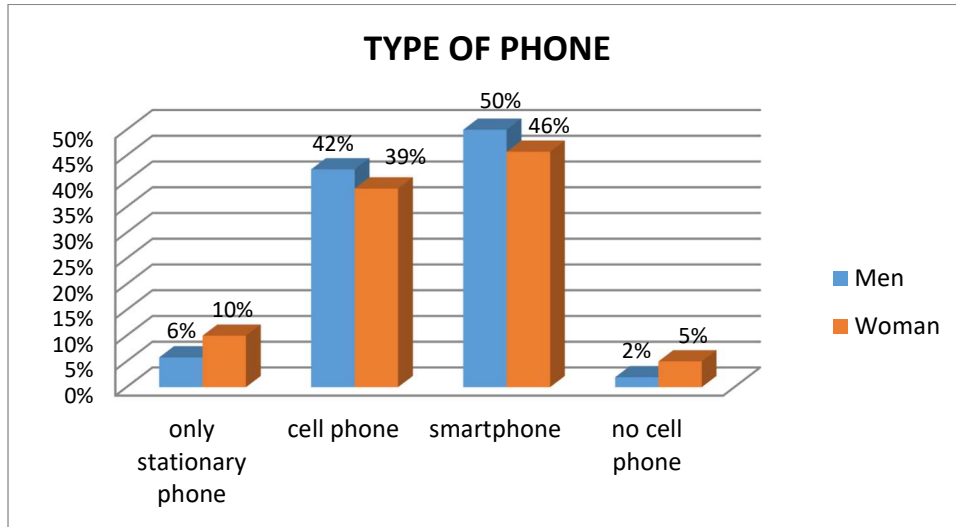


Chart 4. Type of phone

Source: authors' own research.

The vast majority of the respondents have smartphones (50% men and 46% women) or other mobile phones (42% men and 39% women). Only 6% of men and 10% of women have traditional phones, and a marginal percentage reported having phone.

The next chart (5) shows the percentage of elderly people who require assistance from other people.

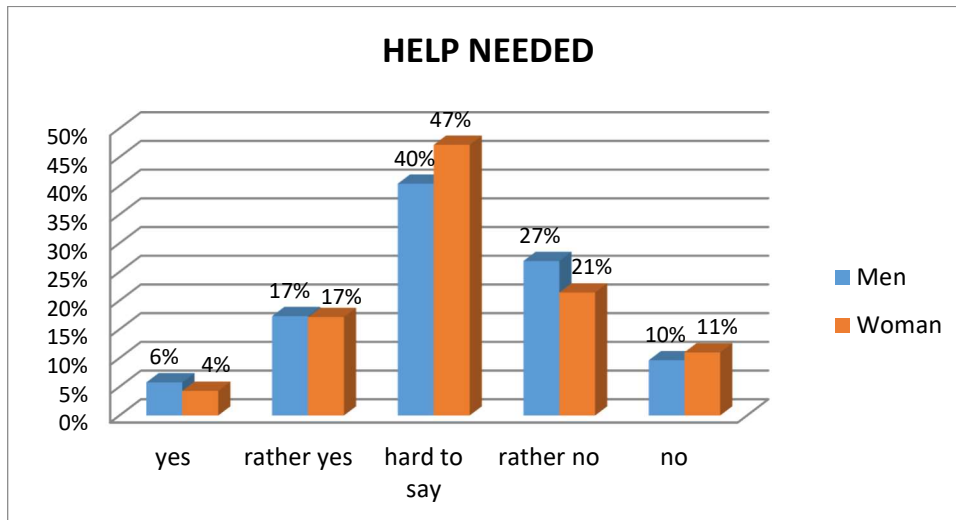


Chart 5. Help needed

Source: authors' own research.

With regard to the issue of required assistance, the largest percentage of the respondents could not take a stance on the matter. 11% of women and 10% of men declare that they do not require any assistance in this matter, while 27% of men and 21% of women state that it is unlikely for them to need help. On the other hand, 17% of both women and men answer that they rather need support from others, and 6% of men and 4% of women are convinced that such help is essential for them.

The next chart (6) presents results pointing to the sense of digital exclusion felt by elderly people.

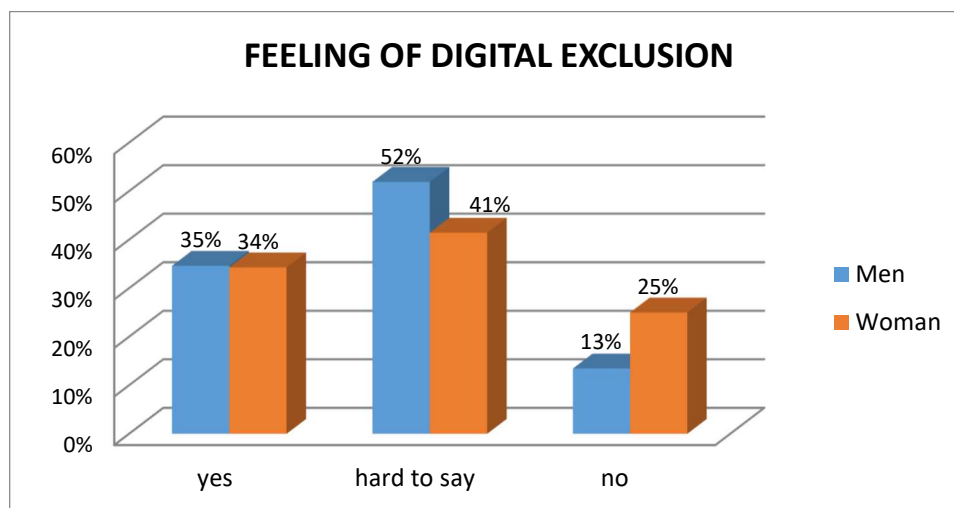


Chart 6. Feeling of digital exclusion

Source: authors' own research.

As regards the sense of digital exclusion, the respondents are mostly unable to take a stance. As many as 52% of men and 41% of women were unable to determine their stance on this matter. Quite a large percentage of men (35%) and women (34%) feel digitally excluded. Only 25% of women and 13% of men are able to cope with the challenges of the digital world.

When drawing conclusions from the conducted research, it should be stated that the problem of digital exclusion affecting a significant part of the older generation is visible.

Only 20% of women and 17% of men possess high digital competence, and 9% of women and 6% of men believe that they have very high competences of this type. The vast majority of men (79%) use a payment card. What may come as a surprise is a very low percentage of women (13%) who do not possess any credit cards. A large percentage of elderly citizens, both men (56%) and women (46%) use the internet. The vast majority of the respondents have smartphones (50% men and 46% women) or other mobile phones (42% men and 39% women). On the other hand, 17% of both women and men tend to need support from other people with regard to digital support, and 6% of men and 4% of women are convinced that such support is essential for them. A fairly high percentage of men (35%) and women (34%) admit to feeling digitally excluded.

In a situation where more and more areas of life are relocated into the Internet, older people may feel digitally excluded and may be exposed to social marginalisation. Elderly people are most likely to request assistance from people in their immediate surrounding. Most frequently, they need information on healthcare services. Reducing digital exclusion of elderly citizen should be one of the priorities of the state's social policy.

4. INSTEAD OF A CONCLUSION

Around the middle of the nineteenth century, many scientists tried to systematize chemical elements based on their properties. One of them was Dmitri Mendeleev³, who noted "a periodic repetition of the properties of chemical elements along with the increase of their atomic masses". He arranged the 63 chemical elements known to him according to the increasing atomic mass in such a way that the elements with similar properties formed columns called groups. Each of the created rows, called periods, would begin with an active metal and would end with non-metal. The correlation between the properties of chemical elements and their atomic mass, discovered by Mendeleev, is the basis of the periodic law. Mendeleev's remarkable genius allowed him to put forward a thesis on the existence of chemical elements unknown to him at the time, and to give their physical and chemical properties based only on the location of empty positions in the periodic table, which these elements were expected to fill. In fact, it turned out to be only a matter of time, and the chemical elements discovered during Dmitry Mendeleev's lifetime, as well as after his death, exhibited the properties predicted by the scholar.

The authors notice here a certain convergence with the exclusion processes that will occur in new artificial human environments. The evolution of the artificial human-made environment of the human being will also be directed towards Outer Space. Artificial creation of a climate in which the human being lives is the condition necessary for survival in such environment. Other challenges include the processes of the survival culture of biocenosis in the technicized society. The scientists sending people to conquer space, hoping to discover a new civilization, or new areas for human colonization must face these challenges in order to counteract the exclusion of astronauts during their mission in the period of expansion.

REFERENCES

- Grzelak, M., Liedel, K. (2012). *Bezpieczeństwo w cyberprzestrzeni. Zagrożenia i wyzwania dla Polski – zarys problemu*. „Bezpieczeństwo Narodowe”, nr 22, II.
<https://encyklopedia.pwn.pl/haslo/Mendelejew-Dmitrij-I;3939619.html>.
- Kranzberg, M. (1986). *Technology and History: „Kranzberg's Law”*. Technology and Culture 3.
- Linie montażowe samochodów FORD. Access on the internet: <https://www.ford.pl/swiat-forda/o-firmie/historia>.
- Schwab, K. (2016a). *The fourth industrial revolution*. Geneva: World Economic Forum.
- Sommer, H. (2006). *Kształtowanie się kultury organizacyjnej w przedsiębiorstwie. Na przykładzie WSK w Rzeszowie*. Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów, <https://knh.prz.edu.pl/publikacje>.

³ Dmitri Mendeleev born 8th of February 1834, Tobolsk, d. 2nd of february 1907, St. Petersburg, Russian chemist, creator of the periodic table (<https://encyklopedia.pwn....>).

- (2017). *Humanistyka w świecie edukacji technicznej* [w:] Sośnicka, J., red., *Inżynier z duszą humanisty. Miejsce i rola problematyki humanistycznej w dyskursie politechnicznym*. Łódź: Wydawnictwo Politechniki Łódzkiej.
- Sommer, H., Zakrzewski, G. (2017a). *Założenia dla edukacji ekologicznej czy bezpieczeństwa ekologicznego*. „Humanities and Social Sciences”, Vol. XXII, 24(3/2017). DOI: prz.edu.pl/pl/publ/einh/344.
- (2017b). *Rozumienie słownictwa z ochrony i kształtowania środowiska w dokumentach państwowych*. „Humanities and Social Sciences”, Vol. XXII, 24 (4/2017), DOI: prz.edu.pl/pl/pdf/einh/365.
- (2017c). *Określenie poziomu świadomości korzystania z wybranych składowych sztucznego środowiska naturalnego*, „Modern Management Review”, Vol. XXII, 24(4/2017).
- Sommer, H., Sommer, H., Zakrzewski, G. (2018.). *Ocena wybranych składowych wpływających na komfort przebywania klientów w wielkopowierzchniowych obiektach handlowych*, „Humanities and Social Sciences”, t. XXIII, z. 25 (1/2018), DOI: prz.edu.pl/pl/publ/einh/378.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.34

Magdalena SZYDEŁKO¹
Marek WOŹNY²

MEASURING THE QUALITY OF LOGISTICS SERVICES FOR INDIVIDUAL CUSTOMERS USING THE SERVQUAL METHOD WITH AN EXEMPLARY COMPANY FROM THE CEP INDUSTRY

Logistics service is a key process performed by CEP enterprises. Measuring quality of service in companies from this branch of industry is a current priority that has to be achieved in order to adjust their offers to the current market requirements. This paper will indicate the possibilities of using the SERVQUAL method to measure the expected and perceived quality of logistics services offered to individual customers of shipping and forwarding companies, and also to identify areas for improvement. The study used the example of InPost LLC. The purpose of the study determined the research procedure, which included indirect research focused on the analysis of literature sources, and direct research conducted among individual customers who used the services of the research object. The SERVQUAL method enabled the formulation of a general rating of service quality, based on the discrepancies between quality as perceived and expected by survey participants, considering the significance of five dimensions.

Keywords: logistics customer service, customer satisfaction, SERVQUAL, CEP industry, InPost LLC

1. INTRODUCTION

Development of competitive advantage is inseparably linked to continuous rivalry of companies to attract institutional or individual customers (Szydełko, 2012). As a result, enterprises implement various strategies, one of which is the customer journey strategy, that can be described as a “thoughtful foresight action plan aimed at systematic progress to reach an assumed customer service pattern, which should allow to maintain or reach a specific market position” (Bujak, Szot, 2009). It is worth noting that customer service in logistics is one of the major competitiveness factors in today's companies operating in various industries (Długosz, 2010; Kramarz, 2016; Krzywda 2019; Matuszczak, Chračhol-

¹ Magdalena Szydełko, Rzeszow University of Technology, Poland; e-mail: mszydel@prz.edu.pl (corresponding author). ORCID: 0000-0002-9661-3519.

² Marek Woźny, Rzeszow University of Technology, Poland; 164595@stud.prz.edu.pl. ORCID: 0009-0004-7860-0396.

-Barczyk, 2016; Meidutė-Kavaliauskienė, Aranskis, Litvinenko, 2014; Sandberg, Abrahamsson, 2011; Sarder, 2021; Zwolińska, 2022).

Logistics customer service is an important and interesting field of scientific research, in particular in the context of the growing importance of the courier, express and parcel delivery industry (CEP industry). An increase in the number of deliveries and growing demand for services related with logistics order processing occurred mainly in connection with wider access to online goods sources, growing popularity of electronic sales channels (particularly during the COVID-19 pandemic) and dynamic development of marketing and sales tools in e-commerce. These factors can be also connected with the intensification of competition on the logistics services market. A noteworthy fact is that customer service quality is becoming a part of development of competitive advantage between companies, also because the quality of products itself, in the material context, is no longer synonymous with luxury and there are even more expectations on the consumer market that concern reliability, certainty, flexibility and delivery-related communication with customers. This situation forces companies to adjust their services on a regular basis, in order to meet customers' expectations, or even exceed them. In that connection, one of the major processes that should be implemented in every company, is systematic evaluation of customer satisfaction to improve the quality of service.

A combination of three subjects of interest in the scientific and management field: logistics, courier services and customer satisfaction measurement gives a specific scope of research, encompassing evaluation and improvement of logistics customer service in a model courier company. A courier company in which logistics customer service has been analysed is InPost LLC, a private logistics operator from Poland. They are a leader on the modern logistics services market and the first company in Poland to build a network of automated parcel machines (Paczkomat) – self-service parcel sending and picking points, available 24/7. This innovative technology allows customers to pick their parcels more conveniently. It is also a cheaper and more environmentally friendly solution. Automated parcel machines have increased efficiency of logistic services, and their success has been largely determined by the speed of service, with 98 percent of parcels delivered on the next day (<https://inpost.pl/o-inpost>). InPost is not only the operator of automated parcel machines. They also offer high quality courier services. From traditional delivery of parcels to the recipient's address, through express shipping with delivery on the same day, to innovative SmartCourier service, allowing quick and safe delivery of confidential documents. The company is constantly growing, and is oriented on extending services for the e-commerce market by offering innovative solutions including: Courier Packages for enterprises, shop integration and fulfilment.

Logistics has a vital role in professional customer service (Woźniak, 2017; Janczewska, Janczewski, 2020). However, there is no uniform and widely approved definition of logistics customer service. The references provide two formulations, telling that customer service is a broad concept that is not easy to define and includes all touch points between the supplier and the buyer, as well as material and non-material elements (Harrison, Van Hoek, 2008). First attempts to formulate a definition of customer service were made by La Londe and P.H. Zinszer (1976). They described that process as:

- all necessary activities, including the receipt, preparing, completion and financial processing of customer orders, and resolving any issues that may appear in connection with these activities,
- certainty and reliability of goods delivery according to customer's expectations,

- comprehensive activity engaging all business areas to deliver goods in a satisfactory manner,
- overall order processing, including customer communication, loading, transport, invoicing, product control and warranty services,
- timely delivery of products that meet customer orders, including timely delivery of sales documentation.

Keeping high quality of logistics processes is not easy. But measuring the key quality points of these processes from the customer's perspective can also be difficult in practice. Companies can use universal quality tools for process improvement, widely described in the literature, that support the evaluation of quality and customer satisfaction, e.g. in the area of logistics order processing. These methods include SERVQUAL and CSI. Having measured the quality of the process with them, the company is able to indicate areas that require improvement and implement optimisation³.

Due to the limited volume of this publication, the research process has been based on the SERVQUAL method. It assumes that ensuring proper quality of service means meeting customer expectations. It consists in measuring the difference between quality perceived by the customer and quality expected by the customer (Frąś, 2014).

2. OBJECTIVE AND METHODOLOGY

In this article, the authors intend to present the results of empirical research focused on the recognition of the customer expectations regarding the logistic customer service of a model courier company and the actual quality of this process carried out by InPost LLC.

This paper will indicate the possibilities to use the SERVQUAL method in measuring the expected and perceived quality of logistics services offered to individual customers of shipping and forwarding companies, and also in identifying areas to improve, using the example of InPost LLC.

The thesis of the paper is the claim that companies operating in the CEP industry must: be aware of the significance of logistics customer service as one of the key factors of competitiveness, measure customer satisfaction using verified methods supporting quality-oriented management and take improving actions based on the outcomes of the satisfaction measurement.

The following research problems have been formulated:

1. How do customers perceive the quality of logistics services offered by InPost LLC?
2. Do InPost LLC meet customers' expectations in terms of logistics customer service as a courier company?
3. Are there any quality aspects (tangibility, reliability, responsiveness, assurance and empathy) that should be improved at InPost LLC as a leader on the courier services market?

The purpose of the work has determined the research procedure. The theoretical part (introduction) has been based on a research procedure that included indirect research focused on analysing literature sources and deductive reasoning. In the empirical part, the

³ Using the terminology related to quality, specified in the ISO 9000:2015 standard, we can distinguish three types of corrective and preventive actions that can be applied at the process quality improvement stage. These include (ISO 9000:2015): 1) correction – to take action to eliminate a detected nonconformity, 2) corrective action – to take action to eliminate the cause of a nonconformity and to prevent recurrence, 3) preventive action – to take action to eliminate the cause of a potential nonconformity or other potential undesirable situation.

following quantitative research methods have been applied: direct research conducted among individual customers who used the services of the research object with the use of surveying techniques and statistical methods. A survey questionnaire has been drafted, reflecting the procedure used in the SERVQUAL method. The responses provided in the survey questionnaire have been individualised to reflect the specificity of services offered to individual customers by InPost LLC. The CAWI (*Computer Assisted Web Interview*) survey technique has been used, in form of an on-line survey sent to participants through the social media. The questionnaire was available on Microsoft Forms, where authors drafted the survey and participants could provide their answers. This survey distribution channel allowed to reach a wide group of customers using InPost LLC services in a short time. Survey participants could complete the survey at a most convenient moment.

The survey questionnaire consisted of three parts in order to:

1. Check customer expectations of logistics services provided by a model (ideal) courier company.
2. Check perceived quality of logistics customer service provided by InPost LLC.
3. Check the significance of five quality aspects (tangibility, reliability, responsiveness, assurance and empathy) from the participants' point of view.

The division of the survey questionnaire used for the SERVQUAL analysis was based on the scheme introduced by V.A. Zeithaml, A. Parasuraman and L.L. Berry (1990), but exact formulations included in the document were modified to reflect the specificity of logistics customer service offered by courier companies.

Data were collected from 30 November until 7 December 2022. 211 survey questionnaires were received, 41 of which were rejected due to missing data or improper classification of quality aspects. 80.6 per cent of survey questionnaires were filled correctly (170 filled forms were analysed). In order to reach the goal formulated above, the final analysis has been made based using the responses of a group consisting of 166 survey participants. Those were persons who did not reply "Never" to the question concerning the frequency of using courier services provided by InPost LLC in the previous three years (2020, 2021 and 2022). Responses of 4 participants, who had not used services offered by the analysed company, were rejected.

In the survey, participants were asked to indicate, among others:

- to what extent a model (ideal) courier company should meet the 22 requirements divided into five quality aspects,
- to what extent those 22 features reflect the way they perceive the actual (experience-based) quality of logistics services offered by InPost LLC.

In the survey questionnaire, participants used a 5-grade Likert scale, where 1 indicated that the interviewee strongly disagrees, 2 – disagrees, 3 – is neutral, 4 – agrees and 5 – strongly agrees with a given statement.

3. RESEARCH RESULTS

The first part of the responses, concerning the difference between the expected (E) and perceived (P) quality is presented in Table 1. It contains the list of 22 features divided into 5 quality aspects, evaluated at two levels: survey participants' expectations for logistics customer service offered by a model shipping company and the actual quality of service offered by InPost LLC, as perceived by the survey participants. For the purposes of an in-depth analysis focused on the comparison of rated quality dimensions for the model courier company and InPost LLC, basic descriptive statistics have been determined. Average rating

for a model courier company based on 22 features (participants' expectations - E), average rating for InPost LLC (quality of logistics services perceived by survey participants - P) and the difference between the perceived and expected quality of logistics customer service (P-E) have been determined.

Table 1. Summary of results received using the SERVQUAL method for 22 features in 5 quality dimensions evaluated for a model courier company and InPost LLC

Overall features evaluated by survey participants (score 1 to 5) with reference to a model courier company and InPost LLC.	Average rating for a model courier company (E)	Average rating for InPost LLC (P)	P-E
Quality dimension No. 1: tangibility			
1. Technical infrastructure (vehicles and automatic parcel machines) of a courier company is very good and visually appealing.	4.13	4.12	-0.01
2. Courier company uses modern technical and IT infrastructure and functional technologies.	4.50	4.31	-0.19
3. Courier company has clear and easy to follow profiles in social media and promotional materials. Its mobile app is intuitive and user friendly.	4.54	4.12	-0.42
4. Courier company uses innovative (e.g. environmentally friendly) and nice parcel boxes.	4.13	3.66	-0.46
Quality dimension No. 2: reliability			
5. Delivered parcels are not damaged and intact.	4.85	4.25	-0.60
6. If customer reports a problem, employees of the courier company are willing to help and competent.	4.75	3.98	-0.77
7. Parcels are delivered on time, as declared before shipment.	4.69	4.42	-0.27
8. Delivery and sending of parcel are handled properly (e.g. delivery of parcel to a right addressee, drafting necessary documentation, receiving electronic delivery confirmation, handing a parcel shipment or return confirmation to a client).	4.65	4.43	-0.22
9. Multiparcel shipment delivered by the courier company is complete.	4.81	4.43	-0.39
Quality dimension No. 3: Responsiveness			
10. Customer can reach out to a courier or call the company hotline.	4.59	4.08	-0.51
11. Employees of the courier company are always willing to help the customer.	4.48	3.98	-0.50
12. Courier company always informs customer on delivery date and time using electronic communication channels (e-mail or SMS).	4.63	4.56	-0.07
13. Courier company is available 24/7 (delivery and sending parcels).	3.61	3.79	0.17

Table 1 (cont.). Summary of results received using the SERVQUAL method for 22 features in 5 quality dimensions evaluated for a model courier company and InPost LLC

Overall features evaluated by survey participants (score 1 to 5) with reference to a model courier company and InPost LLC.	Average rating for a model courier company (E)	Average rating for InPost LLC (P)	P-E
Quality dimension No. 4: Assurance			
14. Employees and technical/IT infrastructure of the courier company are trustworthy (e.g. guaranteed security of shipment, personal data and transactions).	4.71	4.17	-0.54
15. Courier company hotline is available 24/7.	3.49	3.36	-0.14
16. Courier company personnel has necessary knowledge to reply to customers' questions, respond to their needs and problems and help in solving them.	4.46	4.01	-0.45
17. Courier company personnel is kind and attentive.	4.61	4.11	-0.49
Quality dimension No. 5: Empathy			
18. Courier company has an extensive network of parcel delivery points (automatic parcel machines or parcel service points).	4.54	4.52	-0.02
19. Courier company accepts multiple payment methods.	4.53	4.34	-0.19
20. Relatively low cost of parcel service.	4.20	4.01	-0.19
21. Customers can change the method or point of delivery.	4.27	3.84	-0.43
22. Courier company strives to improve the quality of service and checks customer feedback.	4.60	4.02	-0.58

Explanation: P-E – a gap between the perceived and expected service quality.

Source: Author's own work based on the research results.

To explain the first research problem, the average rating of perceived quality of logistics customer service offered by InPost LLC was taken into account. Data analysis has indicated that the following features were most appreciated: informing customers on every change in the time of delivery using electronic means of communication, e.g. e-mail or SMS (4.56), extensive network of parcel collection points - Paczkomat or PaczkoPunkt (4.52), delivery of complete multiparcel shipments (4.43), proper delivery and sending of parcels (4.43) and consistency of actual and declared time of delivery (4.42). The following features of services offered by InPost LLC received the lowest average rating: 24/7 hotline availability (3.36), innovative (e.g. environmentally friendly) packaging (3.66), 24/7 service availability (3.79).

For 21 evaluated features (95%) of logistics customer service, the difference between the average rating received on the basis of customer experience with InPost LLC services and expectations for a model courier company, was a negative value (P-E). It means that the analysed company did not fulfil all customers' expectations. The highest discrepancies between the average rating of customer experience and customer expectations occurred in the following criteria: personnel competence and readiness to help if customer encounters a problem (-0.77, reliability dimension), delivery of a non-damaged and intact parcel

(-0.60, reliability dimension) and strive for service quality improvement and customer feedback analysis (-0.58, empathy dimension). The analysis of gaps between the perceived and expected service quality with near-zero values suggests that individual customers of InPost LLC are satisfied with the efficiency and visual appeal of company's technical infrastructure (-0.01, tangibility dimension), extensive network of parcel delivery and sending points (-0.02, empathy dimension) and informing customers on the time of delivery and shipment status using electronic means of communication (-0.07, responsiveness dimension). As far as 24/7 service availability is concerned (delivery or sending of parcels), perceived quality received higher score than customers' expectations in this aspect (0.17).

The second part of the responses, concerning the difference between the expected (E) and perceived (P) quality, taking into account the weight, is presented in Table 2. According to the SERVQUAL analysis procedure, average weight values (W) have been determined based on the participants' evaluation of significance of the five quality dimensions. The analysis has shown that the highest participants' expectations were connected with the reliability dimension (0.355), while the lowest with the assurance aspect (0.15). The outcomes have been compared with the average rating of individual aspects for a model courier company (E) and for InPost LLC (P). They allowed to determine the difference between the perceived and expected quality of logistics service for the five aspects without considering their weight (P-E) and considering their weight ((P-E)*W).

Table 2. Data used for the calculation of the difference between the perceived and expected quality of logistics service for the five quality dimensions, with reference to their weight

Dimension	The average of the grades		Average weight values (W)	P-E	(P-E)*W
	Expectation (E)	Perception (P)			
Tangibility	4.324	4.054	0.158	-0.270	-0.043
Reliability	4.749	4.300	0.355	-0.449	-0.159
Responsiveness	4.330	4.104	0.173	-0.226	-0.039
Assurance	4.319	3.914	0.150	-0.405	-0.061
Empathy	4.429	4.143	0.163	-0.286	-0.047

Source: Author's own work based on the research results.

At this stage of the analysis, certain conclusions are possible, reflecting the significance (weight) of a given aspect for survey participants. We can also indicate areas to improve in particular companies. For all quality aspects of logistics customer service, the non-weighted and weighted differences between the average rating received on the basis of customer experience with InPost LLC services and expectations for a model courier company were negative values (P-E). This means that there are discrepancies between participants' expectations for courier services and their actual satisfaction with InPost LLC. In order to explain the second research problem, we should indicate that this company did not meet customers' expectations for quality of logistics services, considering the five aspects of quality. The data presented in Table 2 indicate that the largest gap (without reference to significance) occurs for the reliability aspect (-0.449), while the smallest for the responsiveness dimension (-0.226). In order to translate the outcomes of the analysis into proposed improvement in areas particularly important for the customers, Table 2 also

presents subjective quality assessment for the five analysed aspects. The largest differences between the perceived and expected quality of logistics service, considering the significance, occurred in the reliability (-0.159) and assurance (-0.061) aspects.

When trying to explain the third research problem, it should be noted that the analysis of presented data leads to a conclusion that the evaluated courier company should first take improvement actions to achieve higher quality of logistics customer service in two aspects: reliability and assurance, focusing on the other dimensions, including empathy, tangibility and responsiveness in a further perspective.

4. CONCLUSIONS

In the current turbulent economic and geopolitical situation, companies must search for new strategies that would help them overcome the crisis. The management process in modern enterprises from the CEP industry must be based on the awareness of the significance of logistics customer service, being one of the key factors of competitiveness, and should involve improving actions based on the analysis of differences between quality perceived and expected by customers.

This paper indicated the possibilities to use the SERVQUAL method in measuring the expected and perceived quality of logistic services offered to individual customers of shipping and forwarding companies, and also in identifying areas to improve, using the example of InPost LLC.

The method used in the empirical research among InPost LLC customers provided data concerning subjective quality rating in five dimensions: tangibility, reliability, responsiveness, assurance and empathy, presented in this publication. Beside that, customer service process areas that require improvement have been identified. The largest differences between the perceived and expected quality of logistics service, considering the significance, occurred in the reliability and assurance aspects. In the reliability dimension, the largest discrepancies in the rating occurred for the criteria of personnel competence and readiness to help if customer encounters a problem and also for delivery of non-damaged and intact parcels. When analysing the aspect of assurance, the largest discrepancies in the rating appeared for the criteria of building customer trust for the employees and technical/IT infrastructure of the courier company (e.g. by ensuring security of parcel service, personal data and transactions) and also personnel behaviour (kindness and attentiveness). In the further perspective, the analysed company should focus on the following aspects:

- empathy (survey participants expect that InPost LLC would increase efforts to improve the offered services and customer feedback analysis),
- tangibility (survey participants expect wider use of innovative and environmentally friendly packaging materials),
- responsiveness (survey participants expect improvement of communication channels, including contact with courier or hotline of courier company).

InPost LLC is a leader on the Polish market of shipping services, however, there are areas in the analysed process of logistics customer service that should be improved to build a better image of the company and increase customer satisfaction. It is noteworthy that improvement actions should be first taken in areas where subjective quality rating is low. Next, customer satisfaction must be analysed again. Since trends in consumer behaviour may change, finding new ways to improve quality of service is a necessity, especially in

highly competitive industries. That is why regular use of the SERVQUAL method is recommended.

The impact of the research efforts includes implications both for the management practice in InPost LLC and other courier companies. This paper shows the possibility to use the SERVQUAL method in measuring quality and improving logistics customer service in a single courier company, which could be an inspiration for other similar enterprises (see: Ratajczak, Lorenc, 2015; Janczewska, Janczewski, 2020).

Undoubtedly, logistics customer service is a key process performed by companies in the CEP industry, so measuring quality of customer service should be a priority, in order to adjust the offer to current market requirements and to implement optimising activities. These companies can use universal instruments (including SERVQUAL method), widely described in relevant publications, that support the evaluation of customer satisfaction, e.g. in the area of logistic order processing.

The authors are quite sure that certain limitations could not be eliminated in the conducted study. These were mostly associated with the assumed methodological approach. The data collection process has been based on gathering respondents opinions, subjective by nature, which could also affect the quality and content of formulated conclusions. In the survey questionnaire, 5-grade scoring scale has been used, which is not without significance in terms of objectiveness of the results. Interpretation of scoring (despite attachment of relevant descriptions) may vary within the respondents group.

The outcomes of the analysis, as well as related conclusions might be the starting point for further, in-depth empirical study concerning InPost LCC and other courier companies.

REFERENCES

- About InPost* [Access: 14.04.2022]. Access on the internet: <https://inpost.pl/o-inpost>.
- Bujak, A., Szot, W. (2009). *Logistyczna obsługa klienta we współczesnej gospodarce*. „Prace Naukowe Wyższej Szkoły Bankowej w Gdańsku”, Vol. 2.
- Długosz, J., 2010. *Strategic nature of the logistics customer service in the supply chain*. “LogForum”, Vol. 6, Iss. 1, No. 2.
- Fraś, J. (2014). *Wybrane instrumenty pomiaru jakości usług logistycznych*. „Zeszyty Naukowe Uniwersytetu Szczecińskiego”, No. 803.
- Harrison, A., Van Hoek, R. (2008). *Logistics Management and Strategy: Competing Through the Supply Chain*. Harlow: FT Prentice Hall.
- ISO 9000:2015 – *Quality management systems – Fundamentals and vocabulary*. International Organization for Standardization.
- Janczewska, D., Janczewski, J. (2020). *Ocena jakości logistycznej obsługi klienta na przykładzie branży KEP*. „Zarządzanie innowacyjne w gospodarce i biznesie”, No. 2(31).
- Kramarz, M. (2016). *Doskonalenie logistycznej obsługi klienta z perspektywy przedsiębiorstwa flagowego sieci dystrybucji wyrobów hutniczych*. „Zeszyty Politechniki Częstochowskiej. Zarządzanie”, Vol. 24, Iss. 2.
- Krzywda, D. (2019). *Logistics customer service in the packaging industry*. “Polish Journal of Management Studies”, Vol. 20, No. 2.
- La Londe, B.J., Zinszer, P.H. (1976). *Customer Service: Meaning and Measurement*. Chicago: National Council of Physical Distribution Management.
- Matuszczak, A., Chraćhol-Barczyk, U. (2016). *Logistics customer service on the example of courier companies*. “Marketing i Zarządzanie”, No. 5(46).

- Meidutė-Kavaliauskienė, I., Aranskis, A., Litvinenko, M. (2014). *Consumer satisfaction with the quality of logistics services*. "Procedia – Social and Behavioral Sciences", Vol. 110.
- Ratajczak, J., Lorenc, A. (2015). *Ocena efektywności logistycznej obsługi klienta w branży KEP*. „Logistyka”, No. 6.
- Sandberg, E., Abrahamsson, M. (2011). *Logistics capabilities for sustainable competitive advantage*. "International Journal of Logistics", Vol. 14, Iss. 1.
- Sarder, M.D. (2021). *Logistics Transportation Systems*. Amsterdam-Oxford-Cambridge: Elsevier.
- Szydełko, M. (2012). *Logistyczna obsługa klienta jako element kształtowania przewagi konkurencyjnej przedsiębiorstwa*. „Logistyka”, No. 5.
- Woźniak, J. (2017). *Ocena przydatności metod SERVQUAL i CSI w kontekście badania logistycznej obsługi klienta*. „Przedsiębiorstwo we współczesnej gospodarce – teoria i praktyka”, No. 2(21).
- Zeithaml, V.A., Parasuraman, A., Berry, L.L. (1990). *Delivering quality service. Balancing customer perceptions and expectations*. New York: The Free Press.
- Zwolińska, D. (2022). *Logistic customer service process in the face of the COVID-19 pandemic*. "Scientific Papers of Silesian University of Technology. Organization and Management Series", No. 155.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.35

Andrei TSIMAYEU¹

AN ASSESSMENT OF INTENTIONS AND ATTITUDES AMONG ENTREPRENEURS OF GENERATION ALPHA

This article presents the results of an analysis of entrepreneurial intentions and attitudes among children of Generation Alpha (born after 2010). The study is based on a diagnostic survey of 252 primary school students in the West Pomeranian Voivodeship. The results show that even though students, as a rule, have business ideas and positively assess the creation of their own business, they do not often think about creating their own business in the future and are less likely to associate their future with entrepreneurship. The analysis shows that there is a connection between entrepreneurial intentions and attitudes and the socio-demographic profile of respondents. The results can be used to develop new approaches to the organization of entrepreneurial education in primary schools, and to raise children's awareness of the prospects of running their own businesses.

Keywords: entrepreneurship, intentions, attitudes, generation alpha, primary school

1. INTRODUCTION

The problems of entrepreneurial attitudes (EATT) and entrepreneurial intentions (EINT) are the subjects of scientific research by many authors. The assessment of these indicators allows policymakers to draw conclusions about the actual or planned entrepreneurial activity of the population and develop measures to increase the share of the private sector in the economy.

Authoritative international studies of Global Entrepreneurship Monitor (GEM) on an ongoing basis evaluate such indicators as Entrepreneurial Intentions Rate (percentage of population who are latent entrepreneurs and who intend to start a business within three years) and Entrepreneurship as a Good Career Choice Rate (percentage of population who agree with the statement that in their country, most people consider starting a business as a desirable career choice) (GEM, 2022).

Traditionally, entrepreneurial activity is assessed for the age group (18–64 years). This is due to social rules and regulatory documents that assume full legal capacity in business only after 18 years. Studies of entrepreneurial attitudes and intentions in children of primary school age (7–12 years) are not numerous and mostly have a regional or project nature. At the same time, today's primary school students are representatives of Generation

¹ Andrei Tsimayeu, University of Szczecin, Poland; e-mail: andrei.tsimayeu@usz.edu.pl. ORCID: 0000-0002-2547-2245.

Alpha (born after 2010). According to experts, a high level of knowledge in the field of digital technologies will allow representatives of Generation Alpha to start their own business as early as adolescence. (Nellis, 2018, Goyal, 2020, Winter, 2022, Michel Carter, 2022).

Given the anticipated decline in the age at which future generations will commence their first entrepreneurial activities, this article aims to scrutinize entrepreneurial attitudes and intentions among primary school students. This unique insight will facilitate adjustments to state policy on promoting entrepreneurship, fostering heightened entrepreneurial activity in new generations.

2. LITERATURE REVIEW

Entrepreneurial activity primarily depends on such basic factors as knowledge about entrepreneurship as a career choice, entrepreneurial education, and the intention to become an entrepreneur. And if the first two factors relate mainly to educational activities, then the third is directly related to psychology.

Intention is one's mental state as it relates to engaging oneself into performing a certain behavior (Ajzen, Driver, 1992). This factor cannot be omitted, because the intention to start a business is a necessary precursor to entrepreneurial behavior (Linan, Fayolle, 2015; Maheshwari, Kha, Arokiasamy, 2022). Thompson (2009) states that entrepreneurial intention may vary to the degree and intensity between individuals ranging from a very low, effectively zero, to a very high degree of personal, conscious conviction and planning to start a new.

Various theories and models are used in the scientific literature to evaluate and explain entrepreneurial intentions. Among the most famous are: The entrepreneurial event model (EEM) (Shapero, Sokol, 1982), Expectancy Theory (the Rational Intention Theory) (Barba-Sánchez, Atienza-Sahuquillo, 2017), The theory of planned behavior model (TPB) (Ajzen, 1991), The theory of planned behavior entrepreneurial model (TPBEM) (Krueger, Carsrud, 1993), The entrepreneurial intention model (EIM) (Boyd, Vozikis, 1994), The social cognitive career theory model (SCCT) (Lent, Brown, Hackett, 1994), Lüthje and Franke model (LFM) (Lüthje, Franke, 2003).

Our analysis has shown that the theory of planned behavior is most often used in practice to assess entrepreneurial intentions (TPB) (Maheshwari et al., 2022; Linan, Fayolle, 2015). TPB provides that three components determine intent: attitude, subjective norms, and perceived behavioral control (Ajzen, 1991; Ajzen, 2002). It is not by chance that the attitude to entrepreneurship occupies the first place in the structure of the theory of planned behavior. In his research, Kibler (2013) comes to the conclusion that the more positively a person perceives doing business, the stronger the entrepreneurial attitude and entrepreneurial intention will be. The results of studies conducted by other authors (Miranda, Chamorro-Meraa, Rubio, 2017; Barba-Sánchez, Mitre-Aranda, Brío-González, 2022, Krueger, Reilly, Carsrud, 2000; Amofah, Saladríguez, 2022) also confirm that entrepreneurial attitude is the most important factor of entrepreneurial intention. And therefore, when conducting qualitative research, their methodology should provide for the assessment of both EATT and EINT with the possibility of determining the difference (gap) between them (Attitude-Intention Gap).

The importance of entrepreneurial attitudes and intentions has led to the emergence of a large number of studies related to their assessment at all levels of education from primary

school to universities (Rodrigues, Silva, Franco, 2021; Aliedan, Elshaer, Alyahya, Sobaih, 2022; Fidan, Arıcı, 2022; Porfirio, Carrilho, Jardim, Wittberg, 2022).

In 2012–2014, the Danish Foundation for Entrepreneurship – Young Enterprise implemented the ASTEE project (Assessment Tools and Indicators for Entrepreneurship Education). The objective of the ASTEE project has been to develop a set of standard European tools for measuring the impact of Entrepreneurship Education on students' entrepreneurial competencies across all educational levels. The survey questionnaires are research-based and have been validated in two major surveys including 13 European countries and a total of 6488 respondents (Moberg et al., 2014).

Within the framework of the project, a comprehensive assessment of entrepreneurial attitudes and intentions was carried out for three levels (primary, secondary, and tertiary). The research is the largest comprehensive research in Europe over the past 10 years devoted to entrepreneurial activity among young people. To evaluate the responses, respondents used a 7-point Likert scale, ranging from complete disagreement to absolute agreement with the questions asked.

The results of a survey conducted within the framework of the project (Moberg et al., 2014) show that in all groups entrepreneurial intentions are always lower than entrepreneurial attitudes. At the same time, boys had higher entrepreneurial attitudes and intentions than girls (Primary level: Attitudes 5.33/5.22, Intentions 4.66/4.38). Research have also shown that in groups studying entrepreneurship, the indicators of entrepreneurial attitudes and intentions were higher than in groups without entrepreneurial components in the educational program (Secondary level: Attitudes 5.28/4.90, Intentions 4.15/3.34). In addition, children with experience of self-employment or their first entrepreneurial activity outside of school were characterized by higher indicators of entrepreneurial attitudes and intentions.

Over the past five years, several regional studies have been conducted on the territory of Poland (2019, 2020), affecting the assessment of entrepreneurial activity (moods) of children of Generation Alpha (born after 2010).

Thus, according to research conducted in the Ternovsky Povet, 36% of the surveyed elementary school students (3rd grade) saw themselves as future entrepreneur, and 54% could not decide. The children did not notice important qualities and skills in themselves, such as the ability to lead a team, perseverance, and patience (Janas, 2020).

Studies of career plans conducted among high school students in Krakow show that 56% intended to get a job in the private sector, 25% – in public institutions and only 19% would like to manage their own company in the future (Borgiasz-Stepaniuk, 2019).

A focused group interview (FGI) conducted in the Lesser Poland Voivodeship of Poland shows that students in grades 1-7 of primary school for the most part said they would like to have their own company in the future. Despite the high intentions, the students could not determine exactly what their company would do. The students described running their business as a difficult task that requires a lot of commitment and money to start, but it was associated with making a big profit, so they would like to undertake these efforts in the future (Wojtun, Jaworska, Maj, 2022).

Our analysis shows that the methods and results of previous research in Poland do not allow us to fully assess the entrepreneurial attitudes and intentions of Generation Alpha both at the country level and in a particular region.

3. RESEARCH METHODOLOGY

The research was based on the results of a survey conducted in the form of a questionnaire among primary school students of Generation Alpha (born after 2010).

The research was conducted in 2022 on a representative group of schoolchildren who were consumers of entrepreneurial education services in the West Pomeranian Voivodeship of Poland.

At the time of the research, the respondents lived in the territory of the West Pomeranian voivodeship for at least 12 months and had the status of a basic school student for at least 12 months. The final sample included children aged 7 to 12 years attending grades 2–6 of basic schools.

The PAPI (Pen & Paper Personal Interview) technique was used to conduct the survey. The survey respondents were determined as a result of a simple random sample. To evaluate the responses, respondents used a 7-point Likert scale, ranging from complete disagreement to absolute agreement with the questions asked.

The questionnaire contained 24 questions, including 18 main questions related to various aspects of entrepreneurship, and 6 questions related to the socio-demographic profile of respondents. The main 18 questions of the questionnaire were divided into three parts: (1) assessment of respondents' level of satisfaction with the quality of entrepreneurial education, (2) assessment of entrepreneurial intentions and attitudes, (3) assessment of entrepreneurial competencies. The research results presented in this article relate to the second part of the questionnaire. This part of the questionnaire included 5 questions, 4 of which were taken from a questionnaire designed to evaluate the pan-European ASTEE project indicator system (Moberg et al., 2014):

1. I have business ideas that I want to implement;
2. My goal is to become an entrepreneur;
3. I often think about starting a business;
4. In general, starting a business is... (Negative – Positive), (Worthless - Worthwhile) (Boring - Fun).

These questions were specifically designed to assess the entrepreneurial mindset, attitude, and perceived skills acquired by students in the field of entrepreneurial education.

The purpose of our research was to assess the entrepreneurial intentions and of Generation Alpha schoolchildren (born after 2010) who took part in the survey.

Before conducting the main study, we conducted preliminary pilot studies on a group of 26 students of Generation Alpha. Pilot studies have made it possible to improve the questionnaire in order to improve the quality of its filling, as well as the level of reliability and internal consistency of questions.

The actual sample of the survey was 259 respondents. Only 252 out of 259 surveys were selected for the study (response rate – 97.2%). The remaining 7 questionnaires were excluded due to incomplete or incorrect questionnaire replies.

To measure the level of reliability and internal consistency of the survey questionnaire, the Cronbach's alpha coefficient was used, which is 0.80. This is a satisfactory value of Cronbach's alpha when evaluating the psychometric properties of surveys related to the measurement of respondents' motives, attitudes, and intentions in the future ($\alpha > 0.60$).

4. EMPIRICAL RESULTS

The analysis of the demographic profile of respondents (Table 1) showed that the sample had gender parity between boys (51.98%) and girls (48.02). Taking into account

the research methodology used by us, the resulting sample was divided into four groups of schoolchildren according to class levels (grades 2–3, 4th grade, 5th grade, 6th grade) and according to age groups (7–9 years, 10 years, 11 years, 12 years). The age composition was distributed with a predominance in favor of the oldest groups (12 years – 33.33%, grade 6 – 37.3%). This is due to a decrease in demographic indicators in the West Pomeranian Voivodeship and Poland after 2010. The largest number of respondents in the sample lived in cities of up to 50 thousand inhabitants.

Table 1. Demographic profile (N=252)

No.	Indicator	Options	Structure, %
1	Gender	girl	51.98
		boy	48.02
2	Age	7–9 years	20.63
		10 years	19.05
		11 years	26.98
		12 years	33.33
3	Place of residence	village	22.62
		city of up to 50 th. inhabitants	30.95
		city of 51–300 th. inhabitants	23.41
		city of over 300 th. inhabitants	23.02
4	Grade	2–3 grade	16.27
		4th grade	24.21
		5th grade	22.22
		6th grade	37.30

Source: Own study.

To study entrepreneurial intentions and attitudes among primary school students of the West Pomeranian Voivodeship, they were asked 4 questions (Table 2). The analysis of the results shows that children in general positively assess the creation of their own business (5.35). In addition, Generation Alpha considers the creation of their own business to be more worthwhile (5.7) than fun (4.67). Despite the fact that children highly appreciate the presence of their business ideas (4.94), their intentions decrease as they concretize issues related to starting their own business in the future. Children often think about starting their own business (4.08) and to a lesser extent want to become an entrepreneur in the future (3.90).

Table 2. Entrepreneurial intentions and attitudes

Attitudes / Intentions	Question	Mean
Entrepreneurial attitudes	In general, starting a business is...	
	Negative – Positive	5.35
	Worthless - Worthwhile	5.70
	Boring - Fun	4.67
Entrepreneurial intentions	I have business ideas that I want to implement	4.94
	I often think about starting a business	4.08
	My goal is to become an entrepreneur	3.90

Source: Own study.

For a deeper assessment of entrepreneurial attitudes and intentions of Generation Alpha children, we conducted additional studies depending on gender, period of study (grade), place of residence, availability of higher education, and entrepreneurial experience of parents (Table 3).

The analysis shows that boys have higher scores of entrepreneurial attitudes (5.26) and intentions (4.40) compared to girls. Girls are less likely than boys to want to be businessmen and less likely to have business ideas.

Children living in cities of up to 50 thousand people had the best attitudes (5.65) and intentions (4.51) in relation to entrepreneurship. Despite the leadership of this group, it should be noted that the children living in the village had the largest number of business ideas (5.07) that they would like to implement in the future.

The distribution of responses by school classes showed that the leaders are high school students. The highest level of entrepreneurial attitudes was recorded in children in the 5th grade (5.54), and the highest intentions were in children in the 6th grade (4.40). At the same time, it should be noted that the children of the youngest grades (grades 2-3) had the largest number of business ideas (5.33) that they would like to implement in the future.

The analysis shows that children whose parents had higher education had the best indicators of entrepreneurial attitudes (5.21–5.64) and intentions (4.18–4.36). Children whose both parents have higher education are more likely than others to think about starting their own business in the future and have more business ideas.

Our research included the analysis of entrepreneurial attitudes and intentions in children whose parents already had the experience of entrepreneurial activity. Our results show that the attitudes (5.35) and intentions (4.69) of this group of children are the highest, which may indicate the influence of parents on the opinion of their children in relation to entrepreneurship.

Table 3 Entrepreneurial intentions and attitudes by socio-demographic groups

No.	Indicator	Options	Entrepreneurial attitudes	Entrepreneurial intentions
1	Gender	girl	5.13	4.16
		boy	5.26	4.40
2	Place of residence	village	5.09	4.09
		city of up to 50 th. inhabitants	5.65	4.51
		city of 51–300 th. inhabitants	5.10	4.20
		city of over 300 th. inhabitants	4.73	4.21
3	Grade	2–3 grade	4.90	4.17
		4th grade	4.92	4.29
		5th grade	5.54	4.14
		6th grade	5.28	4.40
4	Have any of your parents started a company?	No.	5.24	4.12
		I don't know.	4.74	4.10
		Yes.	5.35	4.69
5	My parents have a higher education	No.	5.35	4.12
		I don't know.	5.00	4.24
		Yes, one	5.64	4.18
		Yes, both.	5.21	4.36
Average			5.19	4.28

Source: Own study.

In addition to the 4 main questions from Assessment Tools and indicators for Entrepreneurship Education (ASTE), our research included the question "How would you describe an entrepreneur?". Students could choose a maximum of 5 answers out of 10 possible (Rich, Ecological, Smart, Wise, Responsible, Bold, Economical, Hardworking, Manager, Resourceful).

The analysis shows that most often schoolchildren considered an entrepreneur to be "rich" – 15.46%, "responsible" – 14.38%, "hardworking" – 13.29%, "wise" – 12.03%, and "smart" – 11.30%.



Drawing 1. Answers to the question "How would you describe an entrepreneur?"

Source: Own study.

5. DISCUSSION AND CONCLUSIONS

The analysis of the results of our research shows the difference between entrepreneurial attitudes and entrepreneurial intentions. Despite the fact that students, as a rule, have business ideas and positively assess the creation of their own business, they do not often think about creating their own business in the future and to a lesser extent associate their future with entrepreneurship.

The results obtained confirm the results of similar studies conducted in other countries (Moberg et al., 2014). The gap between entrepreneurial attitudes and entrepreneurial intentions (Attitude-Intention Gap) ranges from 14.2 to 46.3%, depending on the level of education and the category of schoolchildren.

Research shows that this gap increases as a person grows up. The analysis of the Global Entrepreneurship Monitor – 2021 (GEM, 2022) data shows that the high prestige of an entrepreneurial career of 54.7% (Entrepreneurship as a Good Career Choice Rate) among the population aged 18–64 in Poland is accompanied by a low indicator of entrepreneurial intentions to open a business in the next 3 years of 2.85% (Entrepreneurial Intention Rate).

If experts' forecasts come true and Generation Alpha is characterized by high entrepreneurial activity at an early age, this may cause an "entrepreneurial boom" in the future.

Young people do not have such restraining factors of entrepreneurship development as "fear of losing a stable job", "responsibility for their children", or "overestimation of risks

based on rich life experience". This, as a rule, allows young people to more easily make attempts to realize their life ambitions through the implementation of entrepreneurial activities.

The results of our assessment of entrepreneurial attitudes and entrepreneurial intentions in different socio-demographic groups (gender, place of residence, education, and entrepreneurial experience of parents) confirm the available studies of other authors (Yan, Huang, Xiao, 2023; Li, Wang, Chi, 2022; Amofah, Saladrighes, 2022), who claim that boys have a higher level of entrepreneurial attitudes and entrepreneurial intentions than girls, and the entrepreneurial experience of parents increases the chances of starting their own business in the future.

Our results describing the characteristics of an entrepreneur (Rich, Responsible, Hardworking, Wyse, Smart) partially correlate with the results obtained by other authors. As a result of studies conducted in Lesser Poland Voivodeship (Wojtun et al., 2022). The leaders were such characteristics as "Responsible", "Creative" and "Wise". At the same time, studies conducted by Janas (2020) show that schoolchildren believed that entrepreneurs have such characteristics as "Rich", "Clever" and "Resourceful". A distinctive feature of our research is the fact that the children of Generation Alpha we interviewed additionally highlight such a characteristic as "Hardworking".

The obtained results create prerequisites for further research involving a deep factor analysis of the entrepreneurial behavior of Generation Alpha schoolchildren. So far, there have been few studies in this area.

As for the recommendations and policy conclusions, it can be stated that in order to prepare Generation Alpha for independent entrepreneurship in a timely manner and not allow the gap between EATT and EINT to increase, adjustments must be made to the educational programs of primary and secondary schools. First of all, they should provide for the introduction of practice-oriented educational modules in the field of financial literacy, marketing, business planning, and law, which will be implemented in the form of computer games and interactive applications.

The limitations of this study are related to the fact that the survey is of a regional nature and was conducted among primary school students who were consumers of entrepreneurial education services. Therefore, its results cannot be generalized to other territories and groups. Despite the regional nature of the research, as well as the existing limitations, their results can be used to continue such studies in order to identify patterns and trends of the entrepreneurial activity of Generation Alpha.

This project has been financed by the National Centre for Research and Development within the project "Entrepreneurship education of children of Generation Alpha and the model of business knowledge transfer in primary education in Poland" within the framework of the competition "Solidarity with Scientists".

REFERENCES

- Ajzen, I. (1991) *The theory of planned behavior. Organizational Behavior and Human Decision Processes*, Vol. 50, Issue 2. DOI: 10.1016/0749-5978(91)90020-T.
- (2002). *Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior*. "Journal of Applied Social Psychology", 32(4). DOI: 10.1111/j.1559-1816.2002.tb00236.x.

- Ajzen, I., Driver, B.L. (1992). *Application of the theory of planned behavior to leisure choice*. "Journal of Leisure Research", 24(3). DOI: 10.1080/00222216.1992.11969889.
- Aliedan, M.M., Elshaer, I.A., Alyahya, M.A., Sobaih, A.E.E. (2022). *Influences of University Education Support on Entrepreneurship Orientation and Entrepreneurship Intention: Application of Theory of Planned Behavior*. "Sustainability", 14(20). DOI: 10.3390/su142013097.
- Amofah, K., Saladrignes, R. (2022) *Impact of attitude towards entrepreneurship education and role models on entrepreneurial intention*, "Journal of Innovation and Entrepreneurship", 11. DOI: 10.1186/s13731-022-00197-5.
- Barba-Sánchez V., Atienza-Sahuquillo C. (2017). *Entrepreneurial motivation and self-employment: evidence from expectancy theory*. "International Entrepreneurship and Management Journal". DOI: 10.1007/s11365-017-0441-z.
- Barba-Sánchez V., Mitre-Aranda M., Brió-González J., (2022) *The entrepreneurial intention of university students: An environmental perspective*. "European Research on Management and Business Economics", Vol. 28, Issue 2. DOI: 10.1016/j.iedeen.2021.100184.
- Borgiasz-Stepaniuk, M. (2019). *Postawy przedsiębiorcze wśród młodzieży. „Przedsiębiorczość – Edukacja”*, 15(1). DOI: 10.24917/20833296.151.4.
- Boyd N., Vozikis G. (1994) *The influence of self-efficacy on the development of entrepreneurial intentions and actions*. "Entrepreneurship Theory and Practice", 18(4). DOI: 10.1177/104225879401800404.
- Fidan, N., Arıç, T. (2022). *Entrepreneurship Tendencies of Primary School Students and Variables Affecting Their Entrepreneurial Tendency*. "Discourse and Communication for Sustainable Education", 13(2). DOI: 10.2478/dcse-2022-0017.
- GEM (Global Entrepreneurship Monitor) (2022). *Global Entrepreneurship Monitor 2021/2022 Global Report: Opportunity Amid Disruption*. London: GEM.
- Goyal V. (2020, Jul 24). *Gen Alpha and Learning in the New World* [Blog post] [Access: 22.03.2023]. Access on the internet: <https://www.entrepreneur.com/en-in/technology/gen-alpha-and-learning-in-the-new-world/353752>.
- Janas, M. (2020). *Postawy wobec przedsiębiorczości uczniów w młodszym wieku szkolnym. „Przedsiębiorczość – Edukacja”*, 16(2). DOI: 10.24917/20833296.162.4.
- Kibler, E. (2013). *Formation of Entrepreneurial Intentions in a Regional Context*. "Entrepreneurship and Regional Development", 25(2–3). DOI: 10.1080/08985626.2012.721008.
- Krueger N., Carsrud A. (1993) *Entrepreneurial intentions: applying the theory of planned behaviour*. "Entrepreneurship and Regional Development", Vol. 5, Issue 4. DOI: 10.1080/08985629300000020.
- Krueger N., Reilly, M., Carsrud, A. (2000). *Competing models of entrepreneurial intentions*. "Journal of Business Venturing", 15(5). DOI: 10.1016/S0883-9026(98)00033-0.
- Lent R., Brown S., Hackett G. (1994) *Toward a unifying social cognitive theory of career and academic interest, choice, and performance*. "Journal of Vocational Behavior", Vol. 45, Issue 1. DOI: 10.1006/jvbe.1994.1027.
- Li Y., Wang R., Chi C. (2022). *Who is more likely to start a business? Analysis of the factors influencing undergraduates' entrepreneurial intentions*. "Front. Psychol.", 13. DOI: 10.3389/fpsyg.2022.829955.
- Liñán, F., Fayolle, A. (2015). *A systematic literature review on entrepreneurial intentions: Citation, thematic analyses, and research agenda*. "International Entrepreneurship and Management Journal", 11(4). DOI: 10.1007/s11365-015-0356-5.

- Lüthje C., Franke N. (2003) *The “making” of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT*. “*R&D Management*”, Vol. 33, Issue 2. DOI: 10.1111/1467-9310.00288.
- Maheshwari, G., Kha, K.L., Arokiasamy, A.R.A. (2022) *Factors affecting students’ entrepreneurial intentions: a systematic review (2005–2022) for future directions in theory and practice*. “*Management Review Quarterly*”, DOI: 10.1007/s11301-022-00289-2.
- Michel Carter C. (2022, Mar 31). *Survey: Gen-Z And Gen Alpha Place High Importance on Financial Literacy, Just Like Their Parents* [Blog post] [Access: 22.03.2023]. Access on the internet: <https://www.forbes.com/sites/christinecarter/2022/03/31/survey-gen-z-and-gen-alpha-place-high-importance-on-financial-literacy-just-like-their-parents/?sh=261ca51e6593>.
- Miranda, F., Chamorro-Meraa, A., Rubio, S. (2017). *Academic Entrepreneurship in Spanish Universities: An Analysis of the Determinants of Entrepreneurial Intention*. “*European Research on Management and Business Economics*”, 23(2). DOI: 10.1016/j.iedeen.2017.01.001.
- Moberg, K., Vestergaard, L., Fayolle, A., Redford, D., Cooney, T., Singer, S., Sailer, K., Filip, D. (2014). *How to Assess and Evaluate the Influence of Entrepreneurship Education: A Report of the ASTEE Project with a User Guide to the Tools*. The Danish Foundation for Entrepreneurship – Young Enterprise [Access: 22.03.2023]. Access on the internet: <http://ntsnet.dk/sites/default/files/ASTEE%20rapport%20juni%202014.pdf>.
- Nellis J. (2018, Apr 24). *What does the future hold for Generation Alpha?* [Blog post]. [Access: 22.03.2023]. Access on the internet: <https://blog.som.cranfield.ac.uk/execdev/future-for-generation-alpha>.
- Porfirio, J.A., Carrilho, T., Jardim, J., Wittberg, V. (2022). *Fostering Entrepreneurship Intentions: The Role of Entrepreneurship Education*. “*Journal of Small Business Strategy*”, 32(1). DOI: 10.53703/001c.32489.
- Rodrigues, M., Silva, R., Franco, M. (2021). *Entrepreneurial Attitude and Intention in Higher Education Students: What Factors Matter?* “*Entrepreneurship Research Journal*”, 20200107. DOI: 10.1515/erj-2020-0107.
- Shapero, A., Sokol, L. (1982). *The Social Dimensions of Entrepreneurship* [In:] Kent, C.A., Sexton, D.L., Vesper, K.H., eds., *Encyclopedia of Entrepreneurship*. Englewood Cliffs. NJ: Prentice-Hall.
- Thompson, E.R. (2009). *Individual Entrepreneurial Intent: Construct Clarification and Development of an Internationally Reliable Metric*. “*Entrepreneurship Theory and Practice*”, 33(3). DOI: 10.1111/j.1540-6520.2009.00321.x.
- Winter. D. (2022, Nov 11). *Generation Alpha: Everything Brands Need to Know* [Blog post] [Access: 22.03.2023]. Access on the internet: <https://www.shopify.com/blog/gen-alpha>.
- Wojtun, J., Jaworska, J., Maj, M. (2022). *Przedsiębiorczość młodych Małopolan*. Urząd Marszałkowski Województwa Małopolskiego [Access: 22.03.2023]. Access on the internet: https://www.obserwatorium.malopolska.pl/wp-content/uploads/2022/03/Przedsiębiorczość-młodych_raport_2022.pdf.
- Yan, J., Huang, T., Xiao, Y. (2023). *Assessing the impact of entrepreneurial education activity on entrepreneurial intention and behavior: role of behavioral entrepreneurial mindset*. “*Environmental Science and Pollution Research*”, 30. DOI: 10.1007/s11356-022-23878-w.

Received: July 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.36

Magdalena WIERCIOCH¹

THE NON-FINANCIAL RESULTS OF SUPPORTING ENTERPRISES OF THE AVIATION VALLEY USING PUBLIC FUNDS FOR RESEARCH, DEVELOPMENT AND INNOVATION

One of the most important stimulators for the economic situation of enterprises is conducting research, development and innovation activities. However, the costs of running these activities are so high that they exceed the financial capabilities of many enterprises. The financial remedy turns out to be state aid funds, which can bring a number of different benefits. The main purpose of this paper is to determine the non-financial results of supporting the Aviation Valley cluster through public aid for R&D&I. The article is based on a case study of a unit that raises significant funds for these activities. It defines the concepts of research and development and innovation activities, and discusses the development of these activities in Poland in the years 2011–2021. It also characterizes the non-financial results of supporting the Aviation Valley cluster via public aid funds for R&D&I, summarizing the most important achievements of the Aviation Valley.

Keywords: Aviation Valley, public funds, research, development, innovation

1. INTRODUCTION

The European Union strives for a high level of innovation in the international dimension, wanting to catch up with such economic powers as Japan or the United States. As a result, it allocates huge funds to conduct research, development and innovation (R&D&I) activities. Undoubtedly, an increasing contribution to the development of this type of activity in Poland is made by enterprises. It is thanks to them that specific innovations are created (Prusak, Kardas, 2022) that have an impact on the development and improvement of their economic situation.

Dynamic changes occurring in the environment of each enterprise force the need to constantly adapt and meet the competition. It is no longer enough to just develop – enterprises need to do it more dynamically than the competition.

One of the conditions for increasing the competitive advantage of a unit is conducting R&D&I activity (Baruk, 2022). It is the driving force behind the activity of every company. British economist Ch. Freeman said that a company that does not grow by innovating,

¹ Magdalena Wiercioch, University of Rzeszow, Poland; e-mail: mawiercioch@ur.edu.pl. ORCID: 0000-0002-6091-917X.

simply dies. Meanwhile, many entrepreneurs do not have sufficient financial resources to conduct research, development and innovation activities on their own. These barriers are met by public institutions, which provide a number of aid programs that can be used by various entrepreneurs, regardless of the stage of development, size or legal form of the beneficiary. It is worth noting that under the New EU Subsidies 2021–2027 under the Smart Growth Operational Program (SG OP), as much as EUR 8.00 billion of EU Funds has been allocated to activities in the field of innovation and cooperation between science and business (newdodonacjeunijne.eu, 2023).

Public aid, as a solid injection of cash, should improve the financial situation of enterprises. However, it should be considered whether, apart from the impact on the financial statements, it also brings other benefits to enterprises in the form of non-financial results, such as e.g. achieving the position of a leader, the possibility of implementing specific innovations, etc. Therefore, the purpose of this study is to: determine the non-financial results of supporting the Aviation Valley cluster from public aid for research, development and innovation. The article uses the case study method, a diagnostic questionnaire and the statistical method in order to observe the relationships between the studied variables.

2. REVIEW OF LITERATURE AND NATIONAL REPORTS

2.1. The essence of research, development and innovation activities

The terms "innovation" and "research and development activity" are often equated with each other. Some of the authors claim that to some extent they are synonymous concepts, because as a result of research and development works, innovative products and services are most often created (Ostraszewska, Tylec, 2016). Meanwhile, it can be said that conducting research and development activity determines the innovativeness of enterprises, and the largest part of expenditure on innovation consists of expenditure on research and development (Dachs, 2009). In fact, however, the concept of innovation has a much broader scope of interpretation than the concept of research and development activity.

Poland's membership in the European Union obliges the country to unify the applicable standards in the field of science and technology, which are to contribute to greater consistency in the preparation and development of statistical analyzes in the Community countries. Therefore, the main standard for defining concepts and developing the principles of the applied methodology is the publication developed by the OECD (Organisation for Economic Co-operation and Development) – Frascati Manual. It is considered the basis for the scope and methods of data collection, as well as conducting analyzes in the research and development sphere. According to its assumptions, statistics are prepared for the Central Statistical Office in Poland and the statistical office of the European Union (Eurostat). These recommendations are applied in countries associated within the OECD and the European Union (EU). The Central Statistical Office annually conducts a statistical survey entitled "Research and development (R&D) activities", thus wanting to obtain data on creative activities carried out in Poland, which are undertaken in order to increase the stock of knowledge and find new applications for this knowledge. The data obtained in this way give a full picture of Poland's research and development activity compared to other countries (GUS2, 2018).

The Frascati Manual defines R&D as "creative work undertaken in a methodical way to increase the stock of knowledge – including knowledge about mankind, society and

culture, and to create new applications for existing knowledge” (Frascati Manual, 2018). This definition has been fully implemented by the Central Statistical Office and is reflected in the Act on Financing Science². A definitional analogy can also be found in the Oslo Manual, which is a joint publication of Eurostat and the OECD. This document concerns the principles of collecting and interpreting data on innovation, including the measurement of scientific and technical activities (OECD1, 2008).

The basic features that distinguish research and development activities from other forms of business are: innovative nature, creative properties, unpredictability, methodicality, the ability to transfer or reproduce the results obtained (OECD2, 2018). In addition, the Frascati Manual contains specific examples to guide the correct classification of specific works. The Frascati Manual distinguishes 3 types of research as part of R&D activities – basic, applied and development works.

In turn, the most important definition of innovation can be found in the international methodological manual in the field of innovation statistical research, i.e. the Oslo Manual, which is the third in chronological order in the Frascati Family Manuals series (*Słownik Innowacji*, 2018). The manual defines innovation as “the implementation of a new or significantly improved product (service, product) or process, a new marketing method, or [...] organizational in business practice, workplace organization or relations with the environment” (OECD1, 2008). On the other hand, innovative activity, according to this methodology, is the entirety of scientific, organizational, technical, commercial and financial activities that lead or are to lead to the implementation of innovations. The authors of the handbook emphasize that innovative activities also include research and development activities, but the latter is not related to the creation of a specific innovation.

Undoubtedly, the precursor of the theory of innovation was J. Schumpeter, who, by formulating the definition of innovation in 1912, laid the foundations for further considerations on the issue of innovation. The author understood innovations broadly as the creation of fundamental or radical changes that will cover the transformation of a new idea or technological invention into a market process or a specific product. He argued that the dissemination of innovation is a separate type of change, called imitation. Innovation was considered a unique (one-off) change, while imitative (inventive) changes are continuous and repeatable (*Słownik Innowacji*, 2018; Schumpeter, 1960).

A significant contribution to the definition of innovation was also made by M.E. Porter. According to him, innovation should be defined as the economically successful exploitation of new ideas (Porter, 1990). In this approach, innovations are treated as a continuum of organizational and technical changes. They include both simple modifications of products, processes and services, as well as fundamental changes and the creation of technological innovations.

A summary of the definitions of innovation proposed by contemporary authors can be found in the monograph by A.H. Jasiński (Jasiński, 2014). The author proposes to divide the definition into innovations *sensu stricto* and *sensu largo*. The first group using a narrow definition (*sensu stricto*) includes such authors as: Ch. Freeman, S. Kuznets, E. Mansfield

² Definition according to the Act of 30 April 2010 on the principles of financing science, Journal of Laws of 2018 item 87 as amended, art. 2 reads: “research and development activity – creative activity including scientific research or development work, undertaken in a systematic manner in order to increase knowledge resources and use knowledge resources to create new applications”. Its meaning therefore coincides with the definition contained in the Frascati Manual, but it is not identical.

(Freeman, 1982; Kuznets, 1959; Mansfield, 1968). In this perspective, innovation is defined as a change in manufacturing methods or products, based solely on new, unused knowledge. In a broad sense (*sensu largo*), propagated, among others, by: J.A. Allen, E. Hagen, or Ph. Kotler, an innovation is treated as any novelty or any change in the production process (Allen, 1966; Hagen, 1962; Kotler, 1994).

Nowadays, therefore, a broad approach to the definition of innovation is considered appropriate. The definition used for the purposes of Eurostat, OECD or GUS is largely the same as that of J. Schumpeter.

The definition of the publication prepared by the OECD – The Oslo Manual emphasizes that innovation is created when a product is finally implemented or introduced to the market, and new processes are used in the business. According to many authors, this is of great importance in distinguishing innovation from invention. The latter can become an innovation only at the moment of its practical application. Moreover, a significant proportion of inventions never have to become innovations (OECD1, 2008).

It should be emphasized that conducting innovative activity gives enterprises unlimited sources of competitive advantages. Entities that are aware of this strive for innovation by generating technological knowledge necessary to create new products and processes or to improve the existing ones. Particularly privileged are those entities which receive public aid for the implementation of research, development and innovation activities. The direct inflow of cash may affect the financial results of these entities, but also the non-financial effects of their operations.

2.2. Research, development and innovation activity in Poland in 2011–2021

The Central Statistical Office (GUS), collecting data on public statistics in various fields, annually publishes reports that are the basis of knowledge about the condition of the Polish economy. In 2021, it published another report: “Research and development activities in Poland in 2021”. Studies in the field of research and development activities are adapted to the methodological recommendations that are used in the European Union and OECD countries in order to ensure consistency with international statistics (GUS1, 2021). The subject of the publication focuses on three main categories that describe research and development activities, i.e. inputs, research and development equipment and personnel employed in research and development activities.

When analyzing expenditures on research and development activities financed from external funds, it can be noticed that in the years 2011–2021 their expenditure initially remained at a similar level, oscillating around PLN 8,000–11,000 million until 2018, and in subsequent years it systematically increased to just over PLN 18,000 million in 2021. The earliest reports found in this regard concerned the year 2011. However, Table 1 does not contain a statement for the years 2011–2012, because the report for the previous years indicated “NO DATA” for this period.

For the last of the analyzed years, detailed information was separated on the share of individual groups: enterprises, government sector, higher education, private non-commercial institutions in the global value of outlays for that year. The breakdown shows that enterprises are the second beneficiaries of expenditure on R&D activities financed from external funds (PLN 5,400.0 million). Whereas PLN 3,011.6 million is obtained from institutions with public funds. The rest are funds from foreign enterprises (GUS1, 2021).

Table 1. Outlays on R&D activities in Poland financed from external sources

Executive sectors		Outlays financed from external funds (in PLN million)	
		Total	including from institutions with public funds
Total	2013	8 727,9	6 300,6
	2014	9 518,5	6 792,2
	2015	10 694,2	6 993,5
	2016	8 037,2	6 463,5
	2017	9 686,8	7 754,1
	2018	11 579,1	9 774,6
	2019	14 811,3	11 656,7
	2020	15 943,7	12 497,5
	2021	18 140,5	13 947,7
Enterprises		5 400,0	3 011,6
Governmental		629,6	485,7
Higher education		12 046,7	10 419,7
Private non-commercial institutions		64,1	30,7

Source: GUS1: (*Działalność badawcza i rozwojowa w Polsce w 2021 roku...*).

Table 2 contains a summary of foreign funds financing R&D and budgetary funds for projects co-financed from EU funds.

Table 2. Foreign funds financing R&D and budgetary funds for projects co-financed from EU funds

Executive sectors		Funds from abroad			Budget funds allocated to projects co-financed from EU funds
		total	Including from		
			European Commission	enterprises	
(in PLN million)					
Total	2013	1 892,1	1 481,1	293,2	359,2
	2014	2 160,7	1 785,7	269,0	399,8
	2015	3 023,8	2 629,8	228,2	482,7
	2016	981,1	510,2	299,5	441,6
	2017	1 225,1	623,4	494,6	136,2
	2018	1 804,5	1 035,7	646,4	253,5
	2019	2 134,2	1 424,5	576,9	267,0
	2020	2 325,4	1 712,3	463,8	583,3
	2021	3 079,1	2 391,8	504,6	528,9
Enterprises	1 896,0	1 346,0	474,4	204,3	

Source: GUS1: (*Działalność badawcza i rozwojowa w Polsce w 2021 roku...*).

The largest number of entities financing internal R&D expenditure from foreign funds was in the enterprise sector (83.4% of entities that used this source of financing) (GUS1, 2021). Enterprises were the biggest beneficiaries of foreign funds financing R&D

activities. They acquired as much as 61.58% of the entire pool. The most important source of funds obtained from abroad were the funds of the European Commission, which were used by enterprises in 56.28%. Moreover, in the enterprise sector, one-fourth of the funds from the rest of the world sector, financing research and development, were funds of foreign enterprises.

3. OWN RESEARCH

3.1. Research methodology

The research in this article is based on a case study of a unit that raises significant funds for research and development and innovation activities, and at the same time is assessed as standing out against the background of the country. It was assumed that entities significant from the point of view of the country's development, characterized by innovation and incurring high expenditures on research and development activities, as well as obtaining significant public funds for the development of this type of activity, constitute an important research sample, and their activities are focused on achieving non-financial results. The Aviation Valley, characterized by clear innovation and constituting the core of the development of south-eastern Poland (Chłodnicka, 2016) predestines it as a suitable research entity. Companies operating within its framework attract more and more new investments, foreign investors, cause the development of cooperation with other aviation centers, as well as promote cooperation with universities, research units and scientific institutes (Barwińska-Małajowicz, Micał, Kozak, 2018). Providing various products and services in the area of the aviation industry requires constant research on their production, implementation of new technical and technological solutions, which involves obtaining public aid funds for their co-financing. And the high importance for the country, twice honored with the title of the National Key Cluster, should be reflected in the non-financial results of obtaining this public aid.

The selection of the research sample was conscious and intentional. Its aim was to find such a group of entities that jointly contributes to the development of innovation. This was then to help identify where they obtain funds for the implementation of their research, development and innovation activities and indicate what non-financial results they achieve in connection with obtaining this aid. The selection of the research sample was made using the funnel method, which enabled the selection of the oldest as well as the most dynamically operating group of entities in the aviation sector, which is the Aviation Valley cluster.

3.2. Research results – Non-financial results of supporting the Aviation Valley from public funds for research, development and innovation

In order to determine the non-financial results of supporting the Aviation Valley from public funds for research, development and innovation, entrepreneurs were asked about various factors related to the public aid they obtain, including: being perceived as a modern company, implementing innovative products and services, faster modernization of processes and organization methods, staff creativity, obtaining patents, or implementing process and marketing innovations (18 factors in total).

The importance of each non-financial factor was assessed by the surveyed entities on a five-point Likert scale, where “1” meant a completely untrue sentence, and “5” that the statement fully reflected the situation in a given organization.

The factors were related to two groups: competitiveness and innovation. In the context of the article, factors related to innovation in the enterprise will be considered, in sequence:

- Our employees are constantly encouraged to be creative in performing their assigned tasks.
- The management is looking for growth opportunities, taking into account the ideas of employees.
- Our new products/services are perceived by customers as very modern.
- Our management team takes the risk of seeking and exploiting new, sometimes uncertain growth opportunities.
- In 2009-2017, we implemented process innovations.
- In 2009-2017, we implemented product innovations.
- In the years 2009-2017, we employed/we employ employees dedicated to research, development and innovation activities.
- In 2009-2017, we implemented service innovations.
- In the years 2009-2017, our employees published scientific articles related to research, development and innovation activities.
- In the years 2009-2017, we obtained patents thanks to research financed from state aid.
- In 2009-2017, we implemented marketing innovations.

Only those enterprises that answered the question preceding this part in the affirmative were subject to the examination of individual factors: did your organization obtain public aid funds in 2009–2017, hence $n=60$.

Chart 1 shows the distribution of individual answers related to the innovativeness of the enterprise.

In enterprises where public aid is obtained, employees are most encouraged to be creative in performing the tasks assigned to them (64.4%). At the same time, the managers of these companies look for growth opportunities, taking into account the ideas of employees (63.3%), what is more, the management staff is willing to take risks and look for new, sometimes uncertain growth opportunities (48.4%). In addition, as the third factor, it was emphasized that the products and/or services of enterprises obtaining public aid are perceived by customers as very modern (66.6%).

Among the individual factors, a wording was randomly placed, to which individual non-financial factors were then related, i.e.: the received funding was sufficient to carry out the assumed research.

Pearson's linear correlation coefficient r was used to examine the correlation between the answers given. All statistically significant ($p<0.05$) correlations that were confirmed were positive. This means that as the agreement with one of the statements increased, the agreement with the other of the pair of statements increased. The value of the correlation coefficient itself indicated its strength.

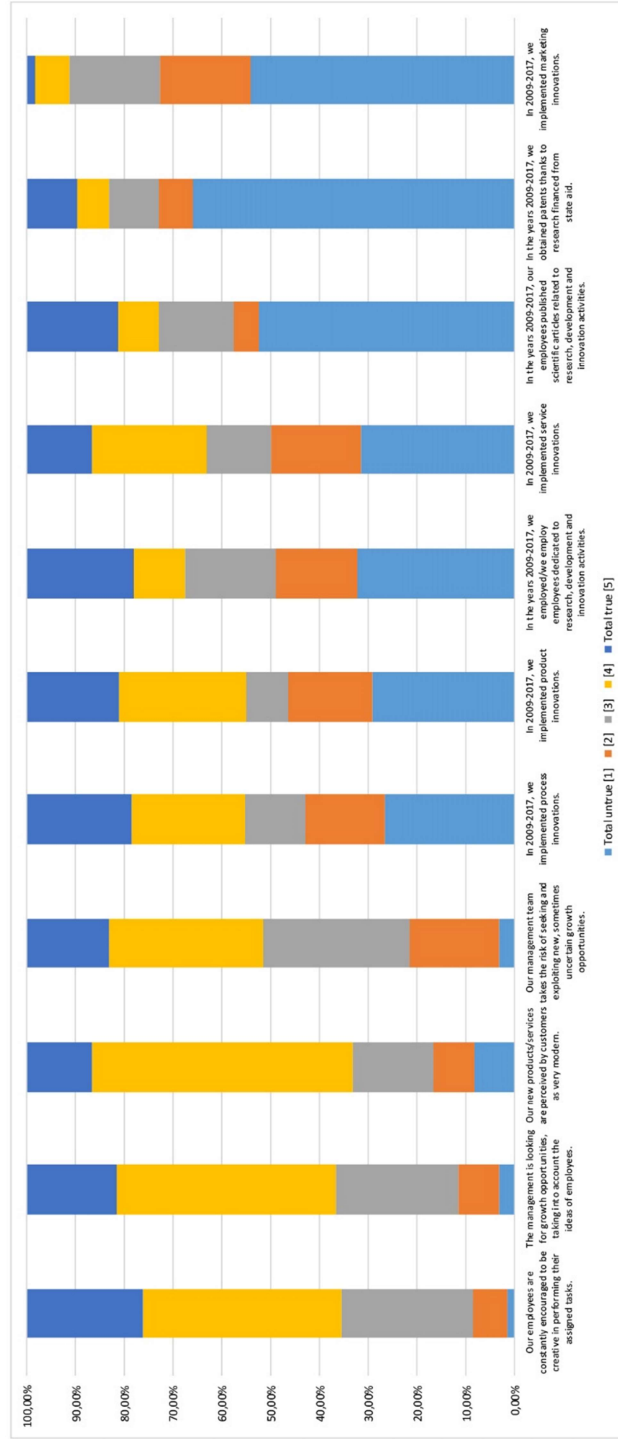


Chart 1. Situation of the surveyed entities in the context of obtained state aid – innovation
 Source: own study, n-60.

Table 3 contains a summary of all obtained correlation coefficients.

Table 3. Evaluation of non-financial results of supporting the Aviation Valley cluster – results of correlation coefficients

Degree of agreement with the stated statements	The received funding was sufficient to carry out the assumed research	The obtained public aid contributed to the improvement of our economic situation
Our organization is a leader in implementing new products/services.	$r=0,2896$ $n=58$ $p=0,027$	$r=0,5025$ $n=58$ $p=0,000$
Our new products/services are perceived by customers as very modern.	$r=0,3080$ $n=58$ $p=0,019$	$r=0,6206$ $n=58$ $p=0,000$
Compared to the competition in 2009-2017, our company implemented more innovative products and services.	$r=0,4373$ $n=58$ $p=0,001$	$r=0,7069$ $n=58$ $p=0,000$
Our new products and services are better and different from competitors' novelties.	$r=0,3439$ $n=58$ $p=0,008$	$r=0,6310$ $n=58$ $p=0,000$
Our management team takes the risk of seeking and exploiting new, sometimes uncertain growth opportunities.	$r=0,4074$ $n=58$ $p=0,002$	$r=0,2502$ $n=58$ $p=0,058$
The management is looking for growth opportunities, taking into account the ideas of employees.	$r=0,3055$ $n=58$ $p=0,020$	$r=0,2213$ $n=58$ $p=0,095$
Currently, the economic situation of our company is better compared to the competition.	$r=0,3114$ $n=58$ $p=0,017$	$r=0,2918$ $n=58$ $p=0,026$
In the years 2009-2017, we obtained patents thanks to research financed from state aid.	$r=0,3915$ $n=57$ $p=0,003$	$r=0,3415$ $n=57$ $p=0,009$
In 2009-2017, we implemented product innovations.	$r=0,3242$ $n=58$ $p=0,013$	$r=0,5633$ $n=58$ $p=0,000$

Source: own study.

Enterprises, in the opinion of which the public aid received for research, development and innovation was sufficient to carry out the assumed research, also emphasized that:

1. their organization is a leader in implementing new products/services,
2. their products/services are perceived by customers as very modern,
3. the number of implemented innovative products and services compared to the competition in 2009–2017 was higher,
4. their new products and services are better and stand out from the competition's novelties,
5. their management takes the risk of seeking and exploiting new, sometimes uncertain growth opportunities,
6. management looks for growth opportunities, taking employees' ideas into account,
7. their economic situation in relation to the competition is better,

8. obtained patents thanks to research financed from state aid funds,
9. in 2009–2017, they implemented product innovations.

4. CONCLUSIONS AND RECOMMENDATIONS

It should be remembered that non-financial factors significantly determine the economic situation of the audited entity. They are the result of care for the development of the enterprise and show the relationship between public aid and the economic situation.

The conscious and intentional choice of the research subject - the Aviation Valley - allowed to observe interesting relationships. It was assumed that the Aviation Valley, characterized by clear innovation and incurring high expenditures on research and development activities, being a kind of driving force for the development of south-eastern Poland, should achieve non-financial results from the fact of obtaining public R&D&I aid. Enterprises operating within its framework implement various investments, provide various products and services that require constant research on their production, and as a result obtain significant public aid funds for their co-financing.

The article describes the importance of research and development and innovation activities in the development of enterprises. The concepts of research and development and innovation activities were defined. Statistical data in Poland regarding this activity in 2011-2021 are characterized in detail.

Non-financial results of supporting the Aviation Valley cluster from public aid funds for research, development and innovation were also characterized, among which the most important are: achieving a leading position in the implementation of new products/services, convincing customers of the modernity of manufactured products and services, standing out from competitors and implementation of various types of product, process, marketing or service innovations. The most important achievements of the Aviation Valley were summarized, thus emphasizing its high importance on the international arena. The characteristics of the most important achievements of the Aviation Valley showed the key success factors, such as: a strong scientific base, the presence of a highly qualified, educated and experienced workforce associated with the aviation industry for many years. Conclusions and recommendations will be important for the further development of the Aviation Valley.

REFERENCES

- Allen, J.A. (1966). *Scientific innovation and industrial prosperity*. London: Longman.
- Baruk, J. (2022). *Nakłady na badania i rozwój w sektorze polskich przedsiębiorstw jako instrument polityki badawczo-rozwojowej*. „Marketing Instytucji Naukowych i Badawczych”, nr 1 (43).
- Barwińska-Małąjowicz, A., Micał, A., Kozak, M. (2018). „Dolina Lotnicza” jako podkarpackie centrum innowacji o światowym znaczeniu dla zrównoważonego rozwoju. „Studia i Materiały. Miscellanea Oeconomicae”, R. 22, nr 2, t. 2.
- Chłodnicka, H. (2016). *Polityka klastrowa a kapitał ludzki*. „Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu”, 2016, nr 440.
- Dachs, B. (2009). *Innovative Activities of Multinational Enterprises in Austria*. Frankfurt am Main: Peter Lang.
- Freeman, Ch. (1982). *The Economics of Industrial Innovation*. London: Frances Pinter.

- GUS1 (2021). *Działalność badawcza i rozwojowa w Polsce w 2021 roku*, Urząd Statystyczny w Szczecinie. Warszawa [Access: 12.03.2023]. Access on the internet: <http://stat.gov.pl/obszary-tematyczne/nauka-i-technika-spoleczenstwo-informacyjne/nauka-i-technika/>.
- GUS2: *Działalność badawcza i rozwojowa*, Główny Urząd Statystyczny [Access: 25.03.2023]. Access on the internet: http://stat.gov.pl/cps/rde/xbcr/wroc/ASSETS_Dzialalnosc_badawcza_i_rozwojowa.pdf.
- Hagen, E. (1962). *On the Theory of Social Change: How Economic Growth Begins*. Chicago. <https://nowedotacjeunijne.eu/programy-2021-2027/> [Access: 09.03.2023].
- Jasiński, A.H. (2014). *Innowacyjność w gospodarce Polski. Modele, bariery, instrumenty wsparcia*. Warszawa: Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego.
- Kotler, Ph. (1994). *Marketing. Analiza, planowanie, wdrażanie i kontrola*. Warszawa: Wydawnictwo Gebethner i S-ka.
- Kuznets, S. (1959). *Six Lectures on Economic Growth*. Chicago.
- Mansfield, E. (1968). *The Economic of Technological Change*. New York: W. W. Norton and Co.
- OECD1 (2008). *Podręcznik Oslo. Zasady gromadzenia i interpretacji danych dotyczących innowacji*. Eurostat. Warszawa.
- OECD2 (2018). *Pomiar działalności naukowo-technicznej i innowacyjnej. Podręcznik Frascati 2015. Zalecenia dotyczące pozyskiwania i prezentowania danych z zakresu działalności badawczej i rozwojowej* [Access: 12.04.2023]. Access on the internet: <http://stat.gov.pl/obszary-tematyczne/nauka-i-technika-spoleczenstwo-informacyjne/nauka-i-technika/>.
- Ostraszewska, Z., Tylec, A. (2016). *Nakłady wewnętrzne na działalność badawczo-rozwojową w Polsce i źródła jej finansowania w sektorze przedsiębiorstw*. „Zeszyty Naukowe Politechniki Częstochowskiej, Zarządzanie”, nr 24, t. 1.
- Prusak, R., Kardas, E. (2022). *Wpływ wybranych aspektów zarządzania wiedzą na funkcjonowanie przedsiębiorstwa*. „Gospodarka Materialowa i Logistyka”, nr 4.
- Porter, M.E. (1990). *The Competitive Advantage of Nations*. Hampshire and London: Macmillan Press.
- Schumpeter, J.A. (1960). *Teoria rozwoju gospodarczego*. Warszawa: PWN.
- Słownik Innowacji – Leksykon haseł 1* [Access: 26.03.2023]. Access on the internet: http://www.pi.gov.pl/PARP/chapter_96055.asp?soid=E57FDB129BC04E42B19E7D4AC12269A1.
- Słownik Innowacji – Leksykon haseł 2* [Access: 26.03.2023]. Access on the internet: http://www.pi.gov.pl/parp/chapter_96055.asp?soid=677964766D394262AB915FB61187C008.

Received: April 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.37

Jinyue YANG¹

THE IMPLEMENTATION OF CORPORATE SOCIAL RESPONSIBILITY (CSR) BY DHL AND SF-EXPRESS: A COMPARATIVE ANALYSIS IN GERMANY AND CHINA

The main objective of this article is to conduct a literature review on the concept of CSR and to evaluate its implementation in large business operators by analyzing and comparing descriptive statistics. The analysis is conducted using secondary data shared by the chosen business operators. The businesses chosen as cases are two large courier companies: DHL in Germany and SF-Express in China. Statistical tools are utilized in data analysis. The study has significant value for presenting the effectiveness of the practice of CSR in similar firms. The article also provides a comprehensive literature overview of the concept of CSR.

Keywords: corporate social responsibility, corporate social performance, sustainable development goals

1. INTRODUCTION

Today's world is facing a series of critical challenges and crises which are mainly caused by human activities. Global warming, climate change, the contamination of the environment by harmful substances, deforestation, decrease in bio-diversities, essential natural resources, as well as social inequality are some of the most discussed and emphasized threats to mankind by a number of scientists and scholars. As a matter of fact, a lot of resources cannot be regenerated in a short period of time, thus, scarcity is a challenge in the modern world. However, there are things that can be done to slow down or prevent such crises and achieve the goal of sustainable development. The concept of CSR has been widely applied in various sectors internationally in order to achieve these goals since it was first introduced in the 1950s. Although CSR is not a novel notion in the academic world, it is still not familiar to the general public. There are a lot of large firms that have been practicing CSR in their daily operation globally. Yet, a considerable variety of businesses tend to lack a basic comprehension of CSR. Furthermore, not much research has been done to comprehensively analyze and evaluate the effectiveness of the empirical practices. In theory, CSR sounds impeccable, however, what matters is its practice in the

¹ Jinyue Yang, the Doctoral School, University of Szczecin, Poland; e-mail: jinyue.yang@phd.usz.edu.pl. ORCID: 0000-0002-6651-4552.

real world. The key objectives of CSR include protecting the environment, cooperating with social, legal, economic, and philanthropic responsibilities, enhancing social well-being, pursuing the goal of long-term sustainable development of the planet, and so on. It is crucial to act rather than only speak about challenges like slowing down the consumption of natural resources, protecting the environment, social welfare, the future of the next generation, and other critical concerns. Hence, CSR plays a significant role in actualizing these sustainable development objectives. There is still a big room in making signs of progress in applying CSR in small and medium-sized enterprises (SMEs). Large companies that have been implementing CSR for years may set examples for SMEs. Therefore, it is significant to study the examples of large businesses that have experiences and accomplishments in implementing CSR, to evaluate the effectiveness of their practices as well as the benefits of the implementation.

The main purpose of this article is to conduct a literature review on the concept of CSR and to evaluate its implementations in large business operators by analyzing and comparing descriptive statistics. The businesses that were chosen as cases for the aim of writing this academic article are two large courier companies in Germany and China, namely, The Deutsche Post Group DHL, and SF-Express. Because they represent the transport sector in different countries, which is crucial to climate change global status. It is also the main justification for the author's analysis of the selected businesses in terms of the efficacy of CSR implementation.

The structure of the article has been organized into three key sections in order to achieve the goal: the literature review, the empirical analysis, and the concluding remarks. The theoretical part is devoted to presenting the general theory related to CSR, and the empirical part is focused on analyzing the newest statistics published by DHL and SF between 2020 to 2021 as well as their official open data on their websites. Following the data mining procedure, the key information related to CSR have been analyzed and evaluated by statistical tools in great detail. Furthermore, the effectiveness of implementing CSR in the selected enterprises was compared, both in terms of similarities and differences. The data analysis and evaluation indicate that both companies have implemented the four pillars of CSR: social, economic, political, and philanthropic responsibilities. Yet, the CSR objectives of the analyzed businesses varied from one to another. Finally, the article ends with a brief discussion and conclusion on the basis of data analysis and evaluation.

2. THE THEORETICAL APPROACH TO CORPORATE SOCIAL RESPONSIBILITY

The concept of CSR has been frequently discussed and highlighted in both business and academic world. Since the 1950s, it has piqued the interest of many different parties, including economists, social scientists, policymakers, entrepreneurs, business managers, investors, and many other stakeholders. Carroll defines CSR as the idea that a firm has several responsibilities to society and the environment. It is also referred to as “cooperate citizenship”, “cooperate social performance”, as well as “sustainable development” and it involves four categories of responsibilities that businesses are holding themselves accountable for: social/ethical, economic, legal, and philanthropic (Carroll, 1999).

The essential tenet of the CSR approach is that businesses must exert significant effort not only to achieve their financial objectives but also to integrate social, environmental, and ethical responsibilities into all facets of their operations (Du, Bhattacharya, Sen, 2010). Howard Bowen is recognized as the first researcher to have introduced the idea of CSR.

Hence, he is known as the father of corporate social responsibility (Carroll, 1979). Yet, many other scholars have defined CSR similarly or differently in light of their own findings. The definitions of CSR that are often utilized by different studies are summarized in Table 1.

Table 1. A list of definitions of CSR

Authors	Concept of CSR
Bowen (1953)	"The obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society".
Drucker (1954)	"It has to consider whether the action is likely to promote the public good, to advance the basic beliefs of our society, to contribute to its stability, strength, and harmony".
Brown, Dacin (1997)	"A corporate status and activities with respect to its perceived societal or, at least, stakeholder obligations".
Matten, Moon (2004)	"CSR is a cluster concept which overlaps with such concepts as business ethics, corporate philanthropy, corporate citizenship, sustainability, and environmental responsibility". It is a dynamic and contestable concept that is embedded in each social, political, economic and institutional context.

Source: Own work based on Bowen (1953), Drucker (1954), Brown, Dacin (1997), Matten, Moon (2004).

The concept of CSR has undergone a transformation of various dimensions from the 1950s to the 21st century. From the definitions of CSR in Table 1, the key point of CSR consists of several aspects, such as the responsibilities of businesses to society, the cooperation between businesses and social sectors, and sustainable development. In a nutshell, the concept of CSR is understood in the following way: a business has multiple responsibilities to society and the environment.

It is also worth noting that the concentration of CSR varies throughout time. For example, when it comes to CSR implementation in the late 1950s, businesses primarily concentrated on the field of philanthropy, which encompasses religious and humanitarian philosophies, community development, unregulated charity, poverty alleviation, and societal obligations. However, in the 1970s and 1980s, the main dimension was "regulated CSR", consisting of the following aspects: extension of CSR commitments, CSR as a symbol of corporate citizenship, stakeholder relationship management, corporate reputation, socioeconomic priorities, bridging governance gap, stakeholders rights, as well as legal and ethical responsibilities. With an increased focus on legality, transparency, and compliance with environmental regulations, CSR has evolved into a strategic instrument in the new millennium (Matten, 2004).

Furthermore, there are slight differences in the dimensions of CSR between the early 1980s and the 21st century. In the 21st century, CSR is more focused on competitive strategies, environmental protection, sustainability of land resources, internationalization of CSR standards, transparency, corporate responsibility, and so forth (Hamidu, Haron, Amran, 2015). The fierce competition in the market promotes the urgent need for companies to implement CSR strategies in order to survive and be more efficient (Galan,

2006). Business managers use CSR as a strategic tool for cooperation and self-regulation within legal and ethical standards. The characteristics of the application of CSR in the new millennium are emphasized as “doing good to do well” (Rosamaria, Robert, 2011).

Furthermore, CSR theory has been considered to be an in-house self-regulating tool, which means it can monitor and discover the negative aspects of running a business and make sure the business is in compliance with both legal and ethical standards (Wood, 1991). According to Crane and co-authors, CSR also emphasizes the necessity for companies to avoid corruption, to pay more attention to legality and morality and to the satisfaction of their key stakeholders, as well as to act in favor of the society in which companies are based (Crane, Matten, Spence, 2013).

Matten and Moon indicated that the CSR theory plays a vital role in various aspects of business operations, such as the implementation of CSR in the areas of markets, workplaces, societies, and the ecological environment. By applying the CSR theory, companies can adjust their management objectives and strategies to better understand their consumers, stakeholders, and responsibilities. With the implementation of the CSR theory, a business is able to self-regulate its actions and improve its business strategies to satisfy the expectations of its customers and stakeholders. Finally, the company may have a good influence on society and be socially reliable (Matten, Moon, 2008).

Due to its multi-dimensional responsibilities, the focus of CSR is varied in different fields. In the economic sector, according to the CSR research from Prahalad and Hammond, “it is absolutely necessary” to learn customers’ consuming behaviors in order to meet the “ethical gate” of consumers, also known as Consumer Social Responsibility (CnSR). CnSR highlights the importance of individual consumer decision-making and how businesses may respond and manage their enterprises by meeting customers’ expectations or having deeper communication with consumers (Pralhad, Hammond, 2002). There are a number of reasons why consumer social responsibility has gained a large concern from businesses. Companies may also study their main stakeholders in the marketplace, such as customers at the micro level, families and communities at the meso level, and governments and public authorities at the macro level, in order to manage CnSR. Table 2 shows a multi-level, multi-agent conceptualization of Consumer Social Responsibility (Caruana, Chatzidakis, 2013).

Table 2 shows that in the field of economics, CSR involves both the utilization of profits created by firms and the behavior of corporations toward their major stakeholders. This relates to the general management of the businesses, and the responsibilities of firms towards their customers, employees, investors, and also suppliers. Therefore, the economic sector of CSR involves the economic development of firms, but the major objective is not to only make profits. Companies may gain benefits while applying CSR, but on the basis of responsibilities (Kitzmueller, Shimshack, 2012). Furthermore, CSR also plays an important role in increasing the loyalty of employees. In the workplace, according to Aguilera, Rupp, and Williams, employees prefer that their employers participate in CSR activities because they feel that if the firm is accountable to its other stakeholders, it will also be accountable to its own employees. By applying CSR, companies give attention to employee care, as well as the degree of the working environment and working circumstances for employees. Hence, CSR has been considered as an “instrument of employee security” (Aguilera, Rupp, Williams, Ganapathi, 2007).

In the case of the social sector, evidence has shown that businesses need to emphasize long-term development over short-term earnings, ensuring that their management adheres to the ethical and moral ideals of social responsibility. A socially responsible firm cares about contract comprehensibility, the supply of additional product information, the

establishment of transparent solutions to complaint problems, and the protection of customers' personal data. Companies are also interested in the needs of the citizens of the region in which the companies operate and cooperate with local authorities (Crane, Matten, Spence, 2013).

Table 2. A multi-level, multi-agent conceptualization of CnSR

Levels	Stakeholders	Motivations	Relational	Ethical	Mechanisms
Micro	Consumers	Maximizing personal benefits	Showing care, adhering to social and group norms	Personal norms, altruistic concerns	Purchases, boycotts, protesting
Meso	Families and communities	Health concerns, concerns over others' well-being	Firming relations between family members and other referent groups; Mutual quest for community	Ethics of care	Purchases, boycotts, protesting
Macro	Governments and public organizations	Substituting government efforts	Managing relations between the state, consumers and markets	Moral and political consequences; Facilitating social justice and equality	Policies, Incentives, laws

Source: Own work based on (Caruana, Chatzidakis, 2013).

When it comes to the environmental aspect, the main idea of CSR is that businesses need to concentrate on applying preventive strategies to protect the environment and ecological system. This involves determining the risk of non-compliance with environmental, health, and safety regulations. Some strategies have been practiced in many businesses, and have been shown to be efficient. During the implementation of the CSR theory, for example, companies educate and train their employees about preventative measures and legislation (Soh, Kim, Whang, 2014).

In philanthropy, CSR involves companies "actively engaging in acts or initiatives to promote human welfare or goodwill" (Carrol, 1991). This overall purpose (such as promoting human welfare or goodwill) clearly broadens the scope of charitable efforts and makes it harder to identify whether commercial operations are within the scope of corporate citizenship. However, in various firms and societies, philanthropic CSR may come in many different forms. In practice, philanthropic CSR may be characterized as business activities that spend monetary and/or other resources to solve social and environmental problems, as defined by the ancient Greek term "philanthropy", which means "love of humanity", or "love of mankind" "generous beneficence" and "happiness" (McCully, 2008). Shreds of evidence have shown that by participating in philanthropic activities, businesses not only benefit society but also benefit themselves. For example, companies build their reputation

and increase their influence in society and, as a result, benefit from sales and profit (Edmondson, Carrol, 1999).

3. RESEARCH METHODOLOGY AND THE ANALYSIS OF THE DATA REGARDING DHL AND SF-EXPRESS

The objectives of this article are to conduct a literature review on the concept of CSR and to assess its adoption in large business operators by analyzing and comparing descriptive statistics, to evaluate the effectiveness and discuss the outcomes of CSR practice in achieving sustainable development goals (SDGs).

This article is exclusively based on shared secondary data of two larger courier companies: DHL and SF-Express, which are the leading logistics companies in Germany and China. In order to achieve the goals of this article, it is necessary to gather some general information regarding the chosen business operators and to illustrate the viable data.

In order to have comparative findings, the data were chosen from the selected companies within the same period, which is the newest sustainable reports as well as other official statistics between 2020 to 2021 from both firms. The data were later carefully analyzed and evaluated by the author. Microsoft Excel has been utilized as one of the tools for data analysis in this article.

3.1. The characteristics and implementation of CSR in DHL

Founded in 1969, after over five decades, DHL has built its business as the leading logistic company in Germany as well as in the world. Currently, DHL has over 590,000 employees in over 220 countries and territories globally. The divisions of DHL is categorized into six different sectors, including Post and Packet, DHL express, global forwarding (including air freight, ocean freight, road freight, rail freight, as well as other additional services), freight, supply chain, and eCommerce solutions. The mission of DHL is to achieve net-zero emissions by 2050. As its CEO, Dr. F. APPEL indicated, "There's no getting around the development of sustainable fuels". The business has made significant efforts to practice CSR. With the scope of the operation and the yearly delivery of more than 1,8 billion parcels, DHL has had a considerable influence on both economic and social development. A summary of DHL's empirical CSR practice is presented below.

Table 3 illustrates that DHL has focused on cooperating responsibilities in four main areas of CSR. DHL took a number of environmental protection-related initiatives as a component of its social responsibilities. The most noticeable achievement was the decrease of the GHG emissions- CO_{2e}, a total number of 654,731 metric tons of GHG emissions were reduced in the period of 01/01/2021-31/21/2021 (DHL, 2021). Furthermore, DHL spent over €150 million on sustainable fuels and technologies in 2021. DHL has also been paying attention to defending human rights and enhancing social well-being. Among the initiatives undertaken were: rejecting child labor and forced labor, promoting diversity and inclusion, respecting employees' rights of the freedom of association and collective bargaining, and so on. In addition, to assist climate protection activities and a more sustainable economy and society, DHL has been actively motivating its employees, clients, and business partners. When it comes to economic responsibilities, DHL provided more than 590,000 job opportunities among over 220 countries and territories, of which 14,762 were disabled. In cooperating with philanthropic responsibilities, DHL has been actively coordinating with and assisting refugees from many countries in the world. Finally, some legal measures were also taken in relation to CSR.

Table 3. The indicators of the implementation of CSR in DHL in 2021

Material topic	Performance indicator
General	
Total number of employees	590,000
International branches	>220 countries and territories
Social	
Certified Go-green specialists	70,000
Electricity from renewable energy sources	86%
Expenditure for sustainable fuels and technologies	€156 million
Greenhouse gas (GHG) emissions were decreased yearly	654,731 metric tons
E-drive systems vehicles	>9,300
Employee Engagement	>80%
Share of female employees	34.7%
Carry out internal audits with regard to human rights	19%
Reduce accident rate (LTIFR) per 200k hours	<3.9
Economic	
Science-Based Targets initiative (SBTi)	€7 billion
Revenues	€81 billion
Packages are delivered annually	>1,8 billion parcels
Jobs provided for the disabled	14,762
Taxes and social security contributions	€4,566 millions
Philanthropic	
Refugee aid- refugees are employed in the form of jobs, training and internships	14,800
The voluntary commitment of employees	16,000
Total duration of annual volunteer services	274,000 hours
Total number of volunteer projects	2,397
Legal	
Employment contract signing rate	100%
Social security coverage rate of full-time employees	100%
Income taxes paid	€1,323 millions
Cybersecurity	Actions were taken

Source: Own work based on the DHL's official statistics (2021).

The material subjects and indicators described above were illustrated in the visual version in order to more clearly see the categories of the CSR initiatives of DHL. The graph below shows an overview of the implementation of CSR in DHL.

Figure 1 clearly shows the dimensions of CSR that DHL has been implementing during its operation. The actions were mostly focused on cooperating social responsibilities, which included promoting diversity and inclusion, working on gender, cultural equality, and environmental protection.

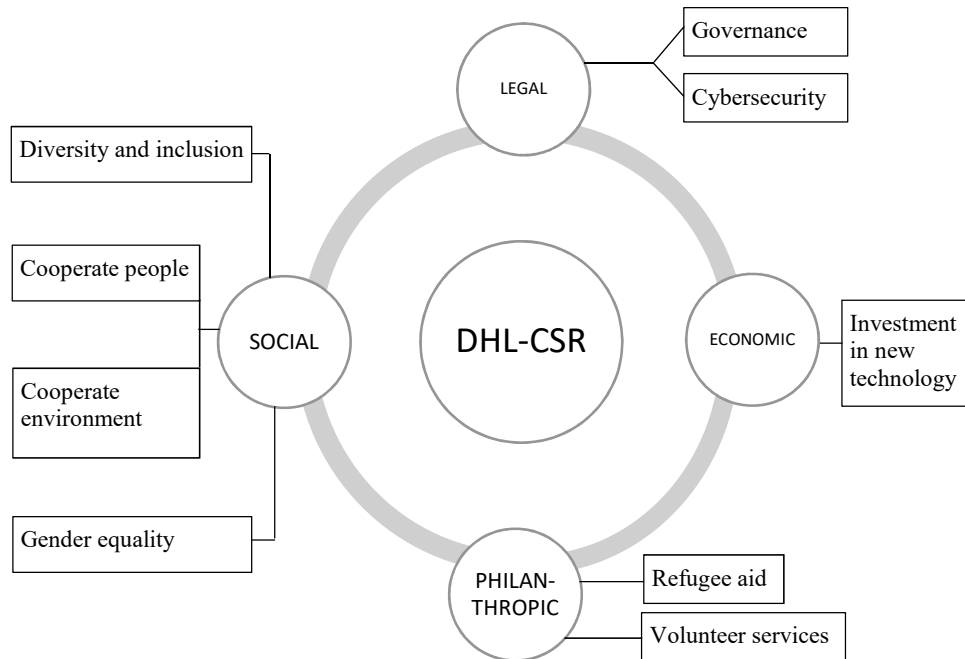


Figure 1. The implementation of CSR In DHL

Source: Own creation on the basis of DHL's Annual Report and official statistics on their website (2022, 2023).

Furthermore, DHL also made efforts to meet the United Nations (UN)' SDGs. According to the UN, the SDGs are designed to protect the environment, decrease poverty and injustice, motivate businesses and individuals to take action for a better world, improve well-being, and promote sustainable development. CSR can be used as a strategy to hasten and facilitate the actualization of SDGs. By integrating CSR into its business operations, DHL is one of the companies that has succeeded in achieving multiple SDGs. The categories of DHL's CSR practices that align with the SDGs are depicted in the graph below.

Figure 2 demonstrates the six SDGs that DHL has fulfilled, which include partnerships for the goals, decent work and economic growth, sustainable cities and communities, gender equality in the workplace, as well as equality in education. It is worth mentioning that DHL as a private operator, has fulfilled 6/17 of SDGs. The speed of the SDGs' realization will be substantially faster if each business in every industry around the world implements CSR into its daily operations.



Figure 2. The initiatives of DHL in its pursuit of the UN's Sustainable Development Goals (SDGs)

Source: Own creation on the basis of DHL's Annual Report and official statistics on their website (2022, 2023).

3.2. The characteristics and implementation of CSR in SF

SF was founded in 1993, Guangdong, China (SF-Express, 2021). It is the largest in China and the fourth-largest integrated logistics service provider in the world. SF has steadily developed its products and services and has expanded into seven different markets, which include time-limited express, economy express, freight, cold chain and pharmaceutical, intra-city on-demand delivery, supply chain, and international business (including international express, international freight, and freight forwarding, as well as supply chain). SF aims to build a digital supply chain ecosystem and establish a front-runner in the world of smart supply chains while utilizing top-tier technological research and development skills.

According to the Sustainability Report of SF from 2020 to 2021, the firm has taken a variety of initiatives to cooperate with its responsibilities towards the public and society. These actions cover the key areas of CSR, which include social, economic, philanthropic, and legal responsibilities.

Table 4. The indicators of the implementation of CSR in SF in 2021

Material topic	Performance indicator
General	
Total number of employees	678,413
International branches	>200 countries and territories
Social	
Energy saving rate	65%
GHG emissions were decreased yearly	179, 000 metric tons
New-energy powered vehicles were added to the transport capacity	8,900
Total public welfare expenditure of SF Foundation	RMB 9,889 million
Female employees	14,7%
Employees from other countries	>1000

Table 4 (cont.). The indicators of the implementation of CSR in SF in 2021

Material topic	Performance indicator
Economic	
Total Investment amount in technology	¥4,93 billion/€669 million
Cumulative Number of patents granted	1680
Delivery volume of characteristic farm produce parcels	720 million parcels
Jobs provided for the disabled	>400
Fund input in special assistance subsidy to impoverished counties for rural revitalization	¥13 million/€2,4 million
Philanthropic	
Total number of SF Lianhua Education Assistance Program supported students	30,152
Total number of SF Nuanxin Program supported patients and orphans	14,794
Total duration of annual volunteer services	21,601 hours
SF public welfare volunteer association	20
Legal	
Hours of workforce anti-corruption education	19,017 Hours
Employment contract signing rate	100%
Social security coverage rate of full-time employees	100%
Data privacy protection	Actions were taken
Work safety investment amount	¥760 million/ €103MILLION
Number of illegal and contraband items detained	32,460

Source: Own work based on SF's Sustainability Report (2021).

As presented in Table 3, SF has devoted a lot of effort to implementing CSR in its social, philanthropic, and economic responsibilities. There are over twenty initiatives in this area, which can be divided into two major categories- environment and people. The firm has taken a total of 13 climate actions in cooperating with social responsibilities, including the "Zero Carbon Future" action. One of the influential accomplishments regarding environmental responsibilities was the reduction of GHG emissions by 279,000 metric tons in 2021 by utilizing a green packaging strategy. Furthermore, SF has also committed to cooperating with citizenship by supporting employees in quality education and public welfare initiatives. When it comes to economic responsibilities, SF focused on the investment of R&D, innovations and creativities, and assistance of small and medium-sized farmers in selling their agricultural products via e-commerce platforms and other online resources. In terms of philanthropic efforts, SF has established specialized foundations to support healthcare and educational initiatives in China's rural areas. Furthermore, there were practices that supported fulfilling legal responsibilities, such as providing employees with a decent, secure workplace, educating staff members against corruption, and other actions.

Overall, there were four domains with different dimensions where CSR has been implemented in SF. The following is an overview of SF's empirical practice regarding the implementation of CSR.

Figure 3 demonstrates how SF has integrated CSR into each of its four pillars of accountability. Compared to DHL, SF placed a greater emphasis on both its social and philanthropic obligations, these actions included comprehensive cooperation in environment protection, employees, citizenships, poverty alleviation, financial support for students, medical assistance, disaster management, as well as volunteer services. Moreover, SF invested a significant amount of funds and efforts in the development of innovative technology and new energy. The investment in Science-Based Targets Initiatives (SBTi) in previous years was one of the initiatives for the aforementioned field.

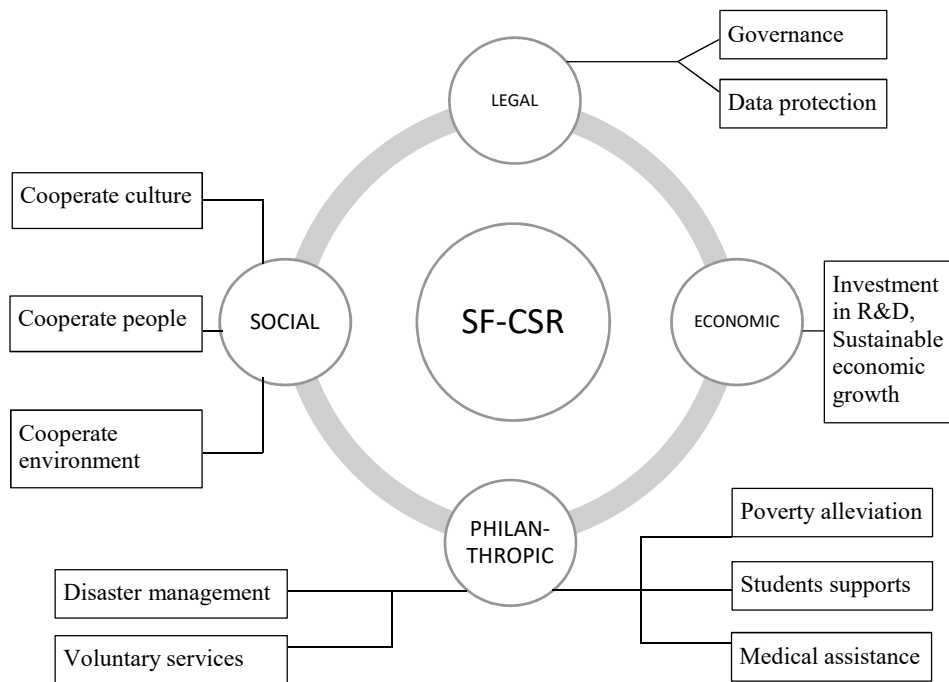


Figure 3. The implementation of CSR in SF

Source: own creation on the basis of SF's Sustainability Report (2021).

Comparable to DHL, SF has also made efforts in the pursuit of the SDGs of the UN. These goals included a wide range of topics, including energy usage supply, economic development, employee and community welfare, product lines, and activities aimed at addressing climate change. Figure 4 shows the goals that SF has achieved by 2021.

Figure 4 illustrates that SF met the 5 aspects of SDGs, including SDGs 7, 8, 11, 12, and 13. Despite of investing in and developing affordable and clean energy, SF has also worked on promoting fair and inclusive quality education, and the possibilities for lifelong learning for everyone. Furthermore, SF has also been seen in pursuit of sustainable cities and communities by various initiatives. In addition, by assisting local farmers in selling their agricultural products, and utilizing greener energy, SF has made efforts to fulfill the SDG of responsible consumption and production. The "Zero Carbon Future" mission supported SF in taking accountabilities and contributing to coping with climatic challenges.

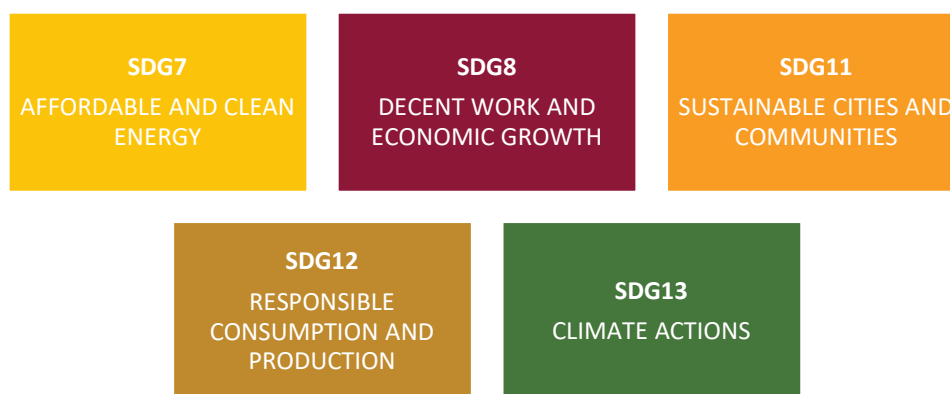


Figure 4. The initiatives of SF in its pursuit of the UN's Sustainable Development Goals (SDGs)

Source: own creation on the basis of SF's Sustainability Report (2021).

4. COMPARATIVE ANALYSIS AND FINDINGS

The priorities and specialized fields of CSR in the business operations of DHL and SF share certain commonalities and exhibit some differences after analysis and evaluation of the data. Both firms have implemented CSR in terms of cooperating on their social, economic, legal, and philanthropic responsibilities. DHL has been adopting “Go-Green Logistics” as part of its social responsibility to preserve the environment, with the help of a team of over 70,000 certified Go-Green specialists. In compliance with societal-environmental responsibilities, SF has its “Zero Carbon Future” program. As a result, the reduction of GHG has made significant progress for both firms. Furthermore, both businesses have made efforts to enhance the well-being of their employees by giving them equal opportunities for employment, promotion, and education. However, according to the secondary data, DHL has achieved relatively more success in its efforts to promote social and gender equality. When it comes to legal responsibilities, the analyzed firms have both been compiling with domestic and international legislations and rules. In terms of the differences of cooperating social responsibilities, DHL prioritized helping refugees, the disabled, and volunteer projects, whereas SF focused its philanthropic efforts on assisting children in rural areas with their education, providing support for medical services, and participating in other charitable endeavors.

4.1. Comparisons and evaluations

In order to better compare the efficiency of the implementation of CSR, the indicators were chosen from the four major fields of CSR, including social, economic, philanthropic, and legal responsibilities. The Impact on the environment is one of the metrics used to measure the efficacy of the empirical practices of CSR. Thus, one of the major indicators was considered to be the reduction of GHG emissions in the analyzed firms. The development of female employees in the analyzed companies was chosen as the 2nd indicator since both firms have been taking actions to foster diversity and inclusion as well as reduce social inequalities. Furthermore, both businesses placed a high priority on SBTi. The investment in R&D, innovations, and cutting-edge technologies is one of the indicators

for cooperating economic responsibilities. The duration of annual volunteer activities was selected as the indicator for the philanthropy dimension since it represents philanthropic dedication. For the empirical assessment of the four CSR categories, the aforementioned descriptive subjects and indicators were chosen as the data that both organizations shared in common. Hence, it is necessary to compare and evaluate the data in order to see the differences between the selected companies in terms of the implementation of CSR.

The variations in results from implementing CSR in business operations in the examined firms are shown in Figure 5.

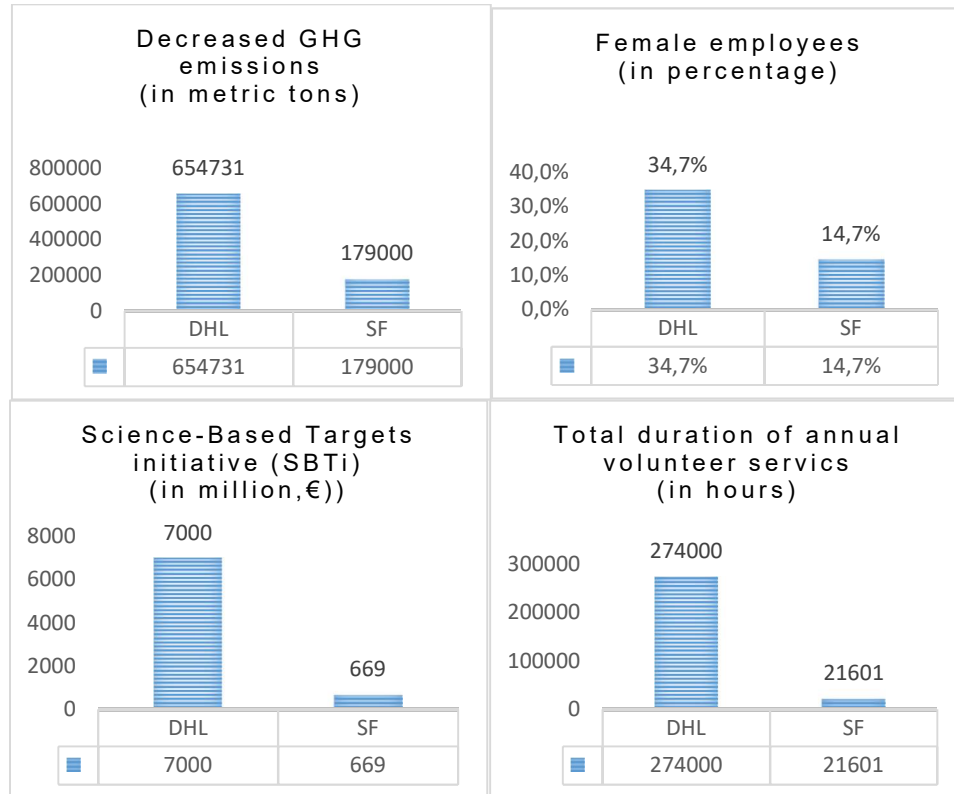


Figure 5. The comparison of the results of CSR in DHL and SF

Source: own creation on the basis of SF's Sustainability Report (2021) and DHL's official statistics (2021).

As shown in Figure 5, the amount of GHG emissions that were decreased yearly in DHL was 3,7 times more than SF in 2021. Furthermore, compared to DHL, SF has much fewer female employees, this might be the result of China's uneven population demographics, as well as other cultural norms. When it comes to the economic aspects, DHL has aimed more investment in SBTi than SF. In philanthropic activities, DHL has provided a total of 274,000 hours of volunteering, which is over ten times as much time as SF participated. Of course, the selected indicators have limitations in evaluating the

effectiveness of CSR implementation. However, it gives an overview of the commitment of the firms to cooperating responsibilities and the pursuit of their SDGs.

4.2. Benefits of CSR on the basis of data analysis

As was already mentioned in the theoretical section, CSR is also known as “cooperate citizenship”, or “cooperate people”. However, the benefits of CSR are not only limited to humans, even though human interaction is necessary for every activity. There are several benefits for businesses to adopt CSR strategy into their daily operation. They can be classified into six categories based on the relationship between various stakeholders. Such six categories of benefits can be abbreviated as “PEOPLE”, where “P” stands for public and private (individual) benefits, “E” for environmental and economic benefits, “O” for organizational advantages, and “I” for legislative advantages. According to empirical evidence, businesses benefited the public by funding education, providing refugees employment opportunities, aiding small – to medium-sized farmers in selling their products and improving public social well-being. On the other hand, private individuals also receive benefits thanks to a number of initiatives, such as individual educational and career development opportunities, philanthropic contributions made by the firm, financial benefits, and so on. Businesses were also able to reduce their GHG emissions and assess how they were responding to various environmental issues by developing CSR initiatives. Hence, CSR undoubtedly benefits the environment and the natural world. Businesses may also gain financial rewards from CSR efforts. The cooperation with their business partners and their investments in new science and technology are some of the main examples. These are some of the organizational benefits that businesses may gain while practicing CSR. Furthermore, implementing CSR has legalization benefits since the business initially complies with regulations. As a result, they are most likely taxpayers, human rights defenders of their employees, responsibilities cooperators, and legislation followers.

5. DISCUSSIONS AND CONCLUSIONS

The main objective of this article was to better understand the concept of CSR by comparative analysis of the two large business operator’s empirical implementation of CSR in their daily operations. The chosen companies are comparable in certain fields according to the data analysis. First of all, both firms are the international leading logistics operators and have similar scales in relation to the number of employees and the international branches in other countries and territories. Furthermore, both firms have been implementing CSR in their business operation for many years.

As can be noticed, CSR encompasses four major areas that businesses should be held accountable for during their operations: social/ethical, economic, legal, and philanthropic responsibilities. It is undeniable that cooperating responsibilities among businesses in the aforementioned four CSR pillars has positive effects for both parties. Based on data analysis of secondary data from DHL and SF, it is clear that CSR has benefited the aforementioned “PEOPLE”, and in exchange, the companies have established a robust trust and reputation among the general public as well as among their employees and business partners. Furthermore, data analysis shows that both companies have engaged in a number of cooperative social responsibility initiatives. The activities they take on a daily basis, from minor to huge, reflect these responsibilities.

It is worth mentioning that some of the indicators of the CSR initiatives undertaken by both companies may not be comparable as a result of different cultures, norms, policies, and other variables. For instance, China still has a long way to go to achieve socioeconomic equality in many areas compared to Germany.

Finally, DHL and SF can be recognized as socially responsible businesses due to the enormous efforts made by both organizations. The cooperative social-environmental obligations of “Go-Green Logistics” and “Zero-Carbon Future” in lowering GHG and reserving limited natural resources are some of the most significant successes of both organizations among their other efforts. CSR may not be the best approach to addressing every problem that humanity is now experiencing, but it is clear that it has the potential to actualize the SDGs and improve social well-being. The modern world is facing a series of crises and threats. Just one or two corporations making an attempt to cope with the issues is never enough. Global warming, climate change, deforestation, and other environmental and non-environmental challenges can only be effectively combated by applying CSR on a global scale.

The findings have the potential:

- To better comprehend the development of the concept of CSR.
- To evaluate and compare the effectiveness of CSR implementation in the large business operators in different countries.
- To identify the benefits of CSR in practice.
- To inspire businesses to integrate CSR into their operations.

Research and practical limitations/implications:

The concept of CSR has been through a series of evolutions since it was first introduced in 1954. Nowadays, CSR has been transformed as a strategy for cooperating social responsibilities by businesses. However, the responsibilities of various sectors may vary. This research is based specifically on the secondary data shared by two large international courier companies. Due to this reason, the study has its limits when evaluating the effectiveness of CSR adoption across various industries.

REFERENCES

- Aguilera, R.V., Rupp, D.E., Williams, C.A., Ganapathi, J. (2007). *Putting the S Back in Corporate Social Responsibility: A Multilevel Theory of Social Change in Organizations*. “*The Academy of Management Review*”, 32(3). Access on the internet: <http://www.jstor.org/stable/20159338>.
- Bowen, H. (1953), *Social Responsibilities of the Businessman*. New York: Harper.
- Brown, T.J., Dacin, P.A. (1997). *The company and the product: Corporate associations and consumer product responses*. “*Journal of Marketing*”, 61(1).
- Carroll, A.B. (1979). *A three-dimensional conceptual model of corporate performance*. “*Academy of Management Review*”, No. 4.
- (1991). *The pyramid of corporate social responsibility: Toward the moral management of organisational stakeholders*. “*Business Horizons*”, 34(4).
- (1999). *Corporate social responsibility evolution of a definitional construct*. “*Business and Society*”, No. 38(3).
- Caruana, R., Chatzidakis, A. (2013). *Consumer Social Responsibility (CnSR): Toward a Multi-Level, Multi-Agent Conceptualisation of the “Other CSR”*. “*Journal of Business Ethics*”, No. 4.

- Crane, A., Matten D., Spence L.J. (2013). *Corporate Social Responsibility: Readings and Cases in a Global Context. (2nd ed.)* London: Routledge.
- DHL (2021). *Greenhouse Gas Verification Statement* [access: 20.02.2023]. Access on the internet: <https://www.dpdhl.com/content/dam/dpdhl/en/media-center/responsibility/dpdhl-group-sgs-verification-statement-gogreen-offsetting-04-2022.pdf>.
- DHL (2019). *Sustainable fuels for logistics* [access: 20.02.2023]. Access on the internet: <https://www.dpdhl.com/en/sustainability/environment.html>.
- Drucker, P.F. (1954). *The Practice of Management*. New York: Collins.
- Du, S., Bhattacharya, C.B., Sen, S. (2010). *Maximizing Business Returns to Corporate Social Responsibility (CSR): The Role of CSR Communication*. "International Journal of Management Reviews", No. 12(1).
- Edmondson, V.C., Carroll, A.B. (1999). *Giving back: An examination of the philanthropic motivations, orientations and activities of large black-owned businesses*. "Journal of Business Ethics", No. 19.
- Galan, J.I. (2006). *Corporate social responsibility and strategic management*. "Journal of Management Studies", No. 7(43).
- Hamidu, A.A., Haron, H., Amran, A. (2015). *Corporate Social Responsibility: A Review on definitions, core characteristics and theoretical perspectives*. "Mediterranean Journal of Social Science", No. 6(4).
- Kitzmueller, M., Shimshack, J. (2012). *Economic Perspectives on Corporate Social Responsibility*. "Journal of Economic Literature", No. 1(50).
- Matten, D., Moon, J. (2008). "Implicit" and "Explicit" CSR: A Conceptual Framework for a Comparative Understanding of Cooperate Social Responsibility. "Academy of Management Review", No. 2.
- McCully, G. (2008). *Philanthropy reconsidered: Private initiatives, public good, quality of life*. Boston: Catalogue for Philanthropy.
- Prahalad, C.K., Hammond, A. (2002). *Serving the world's poor, profitability*. "Harvard Business Review", No. 80(9).
- Rosamaria, C.M., Robert, C.P. (2011). *Historical background of corporate social responsibility*. "Social Responsibility Journal", No. 4(7).
- Wood, D.J. (1991). *Corporate Social Performance Revisited*. "The Academy of Management Review", No. 6(4).
- Soh, C., Kim, H.J., Whang, T. (2014) *Corporate Social Responsibility (CSR) Implementation in South Korea: Lessons from American and British CSR Policies*. "Journal of International and Area Studies", No. 2.
- SF-Express. (2021). *S.F. HOLDING CO., L TD Sustainability Report* [access: 21.02.2023]. Access on the internet: <https://www.sf-express.com/chn/en/sustainable/community>.
- SF-Express. (2023). *Sustainability-governance, Zero Carbon Future, People, Community* [access: 02.03.2023]. Access on the internet: <https://www.sf-express.com/chn/en/sustainable/0Carbon>.

Received: July 2023
Accepted: September 2023
DOI: 10.7862/rz.2023.hss.38

Jolanta ZAWORA¹

THE FINANCIAL CONDITION OF LOCAL GOVERNMENT UNITS IN POLAND IN THE LIGHT OF THE CHANGES IN THE ECONOMIC SITUATION

This article aims to assess the magnitude of the impact of the changing economic situation, related to the COVID-19 pandemic, on the financial situation of local government units (LGUs) in Poland. It employs an indicator analysis, along with a comparative analysis of measures of the financial condition of LGUs. It assesses the extent of financial self-reliance, development opportunities, budget results and operating results, as well as debt. Polish LGUs covered by the comparative analysis are categorized by their respective types. The analysis covers the years 2018–2021. In describing the condition of local government finances, it can be ascertained that the role of self-revenue decreased in 2020; this indicates a reduction in LGUs' financial self-reliance. The deterioration of the financial situation can be further evidenced by falls in LGUs' operating surpluses and investment expenditures. Cities with powiat (municipal) rights find themselves in the most disadvantaged situation.

Keywords: financial situation, COVID-19 pandemic, economic crisis

1. INTRODUCTION

The situation of public finances, including those of local government units (LGUs), depends on macroeconomic conditions shaping the economy throughout the whole country. The state of the Polish economy in 2020 was significantly affected by the COVID-19 pandemic. The introduction of a number of restrictions on economic activity as well as changes in social behavior contributed to the decrease in the activity of the national economy. As a result, in 2020 there was a decrease in gross domestic product (GDP) compared to the previous year (by 2.0%).

Both the government and local administration had to shoulder additional expenditures in order to prevent the spread of the pandemic and to overcome its effects. The increase in ongoing expenditures, concurrent with a decline in overall income, had an impact on the financial situation of local governments.

The economic and social problems caused by the pandemic raised many concerns about the deterioration of the financial situation of local government units and the limitation of their ability to carry out their tasks. The research already carried out during 2020 on the

¹ Jolanta Zawora, University of Rzeszów, Poland; e-mail: jzawora@ur.edu.pl. ORCID: 0000-0003-4180-258X.

expected effects of the pandemic and the socio-economic crisis caused by it showed that the prevailing expectation was that of a significant negative impact of the pandemic on local government finances. Such conclusions were formulated in a report prepared by the Organisation for Economic Co-operation and Development (OECD) and the European Committee of the Regions (CoR). The report was prepared on the basis of a survey conducted in mid-2020 among representatives of local government authorities at various levels in 24 Member States of the European Union. In the short and medium term, most local and regional authorities expected the pandemic to have a negative impact on local government finances by causing a widening disparity between declining incomes and rising expenditures (OECD, 2020).

Similar conclusions were drawn from a survey conducted in mid-2020 by the Bank of Domestic Economy (Bank Gospodarstwa Krajowego). It aimed to assess the financial situation and investment plans of local government units in Poland in the context of the crisis caused by the COVID-19 pandemic. Most local governments predicted a significant decrease in tax revenues, mainly due to PIT and CIT. Cities with powiat rights² and gminas were expected to bear the greatest negative financial consequences of the pandemic. Furthermore, due to declining revenues and increasing expenditures related to the pandemic's impact, local governments declared reductions in other budgetary expenditures (BGK, 2020).

The legal solutions introduced in 2020, affecting the financial economy of local governments (Ustawa..., 2020), were intended to mitigate the effects of the pandemic. The implemented changes included: the possibility of earlier transfer of state subsidies to local governments, softened requirements for keeping a LGU's balanced budget and made it easier to incur liabilities.

The state financial support of LGUs was possible due to the creation of the Government Fund for Local Initiatives (RFIL), which was a program supporting the implementation of local government investments. The Fund was created by a resolution of the Council of Ministers of 23 July 2020 on support for the implementation of investments by local government units (Council of Ministers, 2020).

In view of the aforementioned concerns regarding the negative impact of the pandemic on local government finances, the aim of the article was to assess the scale of the impact of changes in the economic situation related to the COVID-19 pandemic on the Polish LGU's financial situation. Likewise, it was necessary to take into account the pandemic's impact on the economy of local governments at each level. In order to achieve the stated goal, changes in revenues and expenditures of local government budgets were assessed against the backdrop of the changes in the public revenues and expenditures and GDP in Poland. An indicator analysis was used to assess the financial situation of local government units. It enabled specifying the state of finances in relation to the most important areas of local government activity. A comparative analysis of measures of the financial condition of LGUs was applied. It assessed: the extent of financial self-reliance, development opportunities, budget result and operating profit (gross and net) as well as debt. Polish LGUs covered by the comparative analysis were categorized by their respective types.

The analysis covered the years: 2018 and 2019 (a period of stable macroeconomic situation and good economic situation in Poland), 2020 (a period of crisis caused by the

² Powiat is the second level unit of local government, a part of voivodeship. While most powiats consist of multiple gminas (smallest type of local government), major cities are exempt from such subdivision. These cities are the cities with powiat rights.

pandemic), and 2021 (a period of recovery from the crisis and improvement of the economic situation). The time period chosen for the study will enable the verification of the previous predictions of a significant deterioration of LGUs' financial situation. It will allow one to specify the finite extent of local government financial problems in 2020. In addition, based on the state of local government finances in 2021, it will make it possible to specify the extent to which the difficulties were overcome. In 2021, the Polish economy recovered from the crisis caused by the pandemic – GDP increased by 6.8%. However during the year there was a gradual increase in inflation, which had an impact on the rising operating costs of local authorities.

The article contributes to existing studies about the pandemic's impact on the finances of LGUs in Poland. The time and scope of the research make it possible to assess the impact of economic changes on the financial situation of LGUs, as well as to determine the scale of the economic crisis impact on the finances of the various levels of local government. The conclusions of the analysis will specify the baseline position of local governments in the face of new problems affecting their finances in the coming years. These problems include the acquisition of funds in the new EU financial perspective, changes in tax law introduced as a part of the Polish Order, or the more difficult situation of the Polish economy in the wake of the Russian aggression against Ukraine.

In order for local authorities to continue to actively participate in development processes, they should first and foremost maximize their self-revenues, the use of which they themselves decide. Moreover, they should invest in a development-oriented manner so that investments generate long-term income that will allow them to repay the liabilities incurred for the implementation of key development projects.

The empirical material comes from the Local Data Bank of the Central Statistical Office, studies of the Ministry of Finance and reports of the National Council of Regional Chambers of Accounts.

2. ASSESSMENT OF THE FINANCIAL CONDITION OF LOCAL GOVERNMENT UNITS – THEORETICAL APPROACH

Meeting the collective needs of the community and increasing the investment attractiveness of the local government unit depends to a large extent on its income. The desired features of local government income include, above all, efficiency and stability (Bartle, Ebdon, Krane, 2003; Musgrave, 1983; Poniatowicz, 2015). The financial resources at the LGUs disposal constitute the foundation for the functioning of the local government unit and determine the implementation of tasks, including those of investment nature (Grzebyk, Stec, Hejdukova, 2022).

Financial condition is a measure which shows the state of local government finances. It is a complex concept, multidimensional in nature. The level of financial condition cannot be described by one indicator (Bieniasz, Gołaś, 2015; Groves, Godsey, Shulman, 1981; Hendrick, 2004). In order to describe it a number of attributes of the given entity's finances is selected. The financial condition of local government units is shaped, among others, by: the level of income, financial independence, the amount of investment expenditure, the ability to raise non-budgetary funds, achieving budgetary balance. Financial condition is also reflected by solvency. It is understood as the financial capacity of local government to meet its obligations (short-term and long-term) in a timely manner and to ensure continuity in the provision of services to the local community (Ritonga, Clark, Wickremasinghe, 2012; Rivenbark, Roenigk, Allison, 2009; Wang, Dennis, Tu, 2007).

When defining the financial health of LGUs, it is most common to emphasize the local government's capacity to ensure its financial security, understood as its ability to fulfill its basic tasks and to maintain its financial credibility related to the repayment of current and future financial obligations. Continuity of the provision of local government services is a result of the balanced budget, financial independence, independence from transfers, financial liquidity and long-term solvency, as well as rational spending of public funds (Stanny, Strzelczyk, 2018).

An important tool for assessing the financial situation of a local government unit is financial analysis. The scope of financial analysis includes: the efficiency of the management of the public money resources, the ability to settle obligations in a timely manner combined with the level of indebtedness, financial self-reliance and the development capacity. The analysis of the financial condition of the entity provides information about its current and future assets and financial situation. Moreover, it also determines the development opportunities of local government (Zawora, 2018). It is also important to obtain data on potential threats that may lead to a deterioration of the financial situation of the local government. The development and use of appropriate tools for assessing the financial situation of local government units and the ability to interpret the information flowing from them form the basis for determining the development opportunities of a given unit and, on a broader level, for comparing the differences occurring in the financial situation of particular units (Filipiak, 2009). The analysis conducted for selected groups of local government units indicates trends at the national, regional or local level. The conclusions of such analysis should lead to the improvement of the entire system of local government finances, as well as to the improvement of the efficiency of the functioning of individual units.

One of the basic methods of assessing the LGU financial condition is an indicator analysis. It makes it possible to assess the performance of local authorities on an on-going basis and, by identifying trends in a given unit, provides a basis for formulating predictions for the future. The use of indicator analysis should provide a meaningful understanding of the processes and conditions affecting financial potential. The sets of indicators used in the analysis of the financial situation of local governments most often concern the assessment of: financial liquidity, understood as the ability to meet short-term obligations; the level of indebtedness and the ability to manage it; financial self-reliance (revenue and expenditure); the ability to develop the entity, understood as the ability to finance the investment expenditures of a given local government unit; and the attractiveness of LGU, which indicates the wealth and development capacity per capita of a given local government unit (Łukomska-Szarek, Zawora, Kawecki, 2018). The indicators recommended by the Ministry of Finance include: budget per capita and liabilities based on debt instruments (Ministerstwo Finansów, 2021).

3. CHANGES IN GDP, PUBLIC REVENUE AND EXPENDITURE IN 2018–2021

One of the desirable characteristics of a well-functioning local government financial system is ability to ensure stability and efficiency in the long term. The stability and reliability of funding sources significantly influence the scope and quality of public services provided by LGUs (Kata, Czudec, Zajac, Zawora, 2022). Currently, the Polish LGUs finance nearly 30% of public tasks (NIK, 2022). Income of LGUs depends to a large extent on the state budget, while the latter's situation depends on macroeconomic conditions and the state of the economy. Public revenues, including those of local

governments, are largely reliant on public levies, which in periods of economic slowdown results in fluctuations in the budget revenues of both the state and local governments. The volatility of public revenues at particular periods is connected to the problem of ensuring the continuity of funding for public services provided to society as a whole as well as at the local level (Owsiak, 2011).

In 2020, after years of stable economic growth, the economic downturn caused by the COVID-19 epidemic took place in Poland. Numerous restrictions related to the epidemic had serious economic and social consequences, resulting in a decrease in GDP by 2.0% compared to the previous year, when the economic growth rate was 4.5% (Table 1). In 2021, Poland, like most European Union countries, recorded a high rate of economic growth. Although temporary restrictions related to the need to counteract the epidemic were still in force, they were much milder than a year earlier. As a result, Poland's GDP grew by 6.8% and was one of the most dynamic increases since 2007, when it exceeded 7%. Thus, in 2021, Poland maintained an economic growth rate exceeding the average growth rate in the European Union, which was 6.1% (NIK, 2022). Household consumption was the main contributor to Poland's GDP growth. It rose to 6.2% after falling to 3.0% in 2020. When assessing the rate of economic growth in 2021, it is also important to remember how low the 2020's baseline was. Additionally a gradual intensification of inflation was observed throughout 2021. The average annual increase in the prices of consumer goods and services was 5.1% (3.4% a year earlier).

Table 1. Changes in GDP as well as government revenue and expenditure between 2018 and 2021 (%)

Years	2018	2019	2020	2021
Previous year = 100				
Gross Domestic Product	105.9	104.5	98.0	106.8
Public income	110.7	107.4	102.7	114.9
Public expenditures	107.3	108.7	117.7	102.8
National debt	102.3	100.7	112.1	103.3
GDP = 100				
Public income	41.3	41.0	41.3	42.3
Public expenditures	41.5	41.8	48.2	44.2
Result	-0.2	-0.7	-6.9	-1.9
National debt	46.5	43.2	47.5	43.8

Source: Own study based on (NIK, 2022; GUS, 2022; Ministerstwo Finansów, 2023).

In 2018–2021, the increase in public revenues was maintained. However, there was recorded a much lower growth rate, as compared to previous years, in 2020 (102.7%). In 2021, the increase in public revenues compared to the previous year was much higher – by 14.9%. Revenues in relation to GDP increased from 41.3% in 2020 to 42.3% in 2021. Such a high increase in public income, as well as its level in relation to GDP, has not been observed in Poland in the last ten years. At the same time, public spending was at an increased level, compared to the period before the COVID-19 epidemic, which in 2021 amounted to 44.2% of the gross domestic product. In recent years, public spending was higher in relation to GDP only in 2020, when it amounted to 48.2%.

The consequence of the high dynamics of revenues and the decrease in public spending in 2021 was a significant reduction in the general government deficit compared to 2020, when it amounted to as much as 6.9% of gross domestic product, but it still remained significantly higher compared to 2018–2019, when it accounted for 0.2% and 0.7% of GDP, respectively. The government institutions were primarily responsible for the deepening of the deficit of this sector in 2020–2021. The local government institutions generated a surplus in 2020–2021, which accounted for 0.2% and 0.6% of gross domestic product, respectively.

In 2020, public sector debt increased significantly (by 12.1% compared to the previous year), constituting 47.5% of gross domestic product. At the end of 2021, the ratio of public debt to GDP decreased to 43.8%, and there was also a lower increase in debt compared to the previous year – by 3.3%. The size of the national debt was primarily influenced by the increase in government debt, while the local government debt increased by 9.4% in 2020 compared to the previous year, and by 1.8% in 2021. It is also worth noting that the share of LGUs debt in the public finance sector debt remained stable, fluctuating from 7.4% to 8.1% in 2018–2021.

4. FINANCIAL SITUATION OF LOCAL GOVERNMENT UNITS IN POLAND IN 2018–2021

In addition to the recession caused by the pandemic, the financial situation of local governments in the analyzed period was significantly affected by changes in the provisions on personal income tax introduced in 2019 (including, among others, a reduction in the tax rate and exemption from income tax for people under 26 years of age), affecting the level of tax revenues of local governments (Ustawa..., 2019). Along with the economic situation, legislative changes were an important factor negatively affecting the level of revenues of local governments, especially in terms of their share of PIT and CIT taxes (Kwiatkowski, Tyszkiewicz, Wójcik, 2021).

In 2018–2021, the budget revenues of local government units increased steadily. Their highest increase – by 10.6% – compared to the revenues of the previous year was recorded by the local government sector in 2019 (Table 2). This was slightly higher than the dynamics of 2017 and 2018, amounting to 107.6% and 109.6%, respectively (Krajowa Rada RIO, 2020, 2021). In 2020–2021, the dynamics of income growth decreased slightly, amounting to 109.5% and 109.3% respectively, which was mainly influenced by a decrease in self-revenue lower than in 2018–2019. Particularly unfavourable changes occurred in 2020, when the income of LGUs from income taxes (CIT and PIT) decreased compared to the previous year. The negative trend in this income group was influenced by a 1.9% decrease in LGUs income from the personal income tax. An unfavourable change in the financing structure of local governments is also indicated by the increase in revenues obtained from the general subsidy, received by local governments in 2021 to supplement their revenues (among others, due to partial compensation for the loss of income from PIT). It should be noted, however, that in 2021 the growth rate of own revenue was higher than in 2020, with a significant increase in personal and corporate tax revenue – CIT revenue increased by 26.3%, while PIT revenue increased by 12.7%, and this was similar to the growth rate observed before the pandemic (the average growth rate in 2017–2019 was 11.0%) (Krajowa Rada RIO, 2022).

The expenditures of LGUs increased to a lesser extent than revenues in the period under review. On-going expenditure grew at a similar rate to total expenditure. However, the

growth was higher in 2019–2020. What was worrying, though, was the decline in local government property expenditure – by 3.5% in 2019 and by 4.5% in 2020. The year 2021 saw an increase in property expenditure (by 6.3%), but its level (PLN 48.1 billion) was still lower than in the year before the pandemic (PLN 49.0 billion). Also noteworthy is the low level of implementation of local government investment plans in 2021 (77%), related, among other things, to the delayed disbursement of funds under the new financial perspective of the EU 2021–2027 and the National Reconstruction Plan (NRP). However, it is important to reverse the downward trend in LGU investments. The boost to local government investment activity in 2021 was facilitated, among other things, by funds from the Government's Local Investment Fund (GLIF), allocated from the COVID-19 Countermeasure Fund (Departament Analiz Ekonomicznych, 2022). The total target value of funds addressed to local government units under the Fund in the years 2020–2021 was over PLN 13 billion (Rada Ministrów, 2020).

The decrease in the operating surplus (the difference between current income and current expenditure) proves the smaller development opportunities of local government units in 2020. After the surplus level increased by 9.5% in 2018 and by 4.5% in 2019, the operating surplus decreased by 11.5% in 2020. However, in 2021 there was a significant increase in the surplus – by 71.2%.

The trend of an increase in the amount of LGU debt continued between 2018 and 2021. In 2020, there was a higher increase in debt compared to the previous year – the growth rate was 109.5%. This was due to an increase in liabilities due to credits and loans and issued bonds by 9.5%. In 2021, the pace of debt growth slowed.

Table 2. |Changes in budgetary revenue and expenditure of local government from 2018 to 2021 (previous year = 100%)

Years	2018	2019	2020	2021
Total revenue	109.6	110.6	109.5	109.3
Self-revenue	109.5	109.5	107.8	108.4
Corporate income tax	115.7	112.4	103.9	126.3
Personal income tax	113.4	110.3	98.1	112.7
General subsidy	104.0	109.4	108.6	122.8
Targeted subsidies	114.5	113.5	113.0	101.0
Total expenditure	112.7	108.0	106.8	105.6
On-going expenditure	105.9	111.0	109.3	105.4
Property expenses	150.2	96.5	95.5	106.3
Operating surplus	109.5	104.5	88.5	171.2
Total debt	110.4	107.8	109.5	101.4

Source: Own study based on (Ministerstwo Finansów, 2022; Krajowa Rada RIO 2022; NIK, 2022).

It is noticeable, when observing the diversification of changes in the level of income of each level of local government units, that the least favourable changes, visible in 2020, concern cities with powiat rights. They achieved relatively the lowest growth in total income (amounted to 6.8%) and self-revenue (1.8%). These entities rely heavily on tax revenues, especially income tax, which together account for around half of their self-

-revenue, while being particularly vulnerable to the economic crisis. In 2020, the income from PIT and CIT decreased in most local governments. However, the decline was greatest in cities with powiat rights (Table 3).

Only voivodeship governments recorded an increase in the operating surplus (by 14.7% compared to the previous year). At the powiat and gmina level, the surplus was lower by nearly 2%, while the highest decrease in operating surplus was recorded in cities with powiat rights. There the surplus of ongoing income over on-going expenditure decreased by almost half in comparison with the previous year.

The lower development capacity of the local governments is also evidenced by the decrease in investment expenditure seen in 2020 in all categories of LGUs. The highest decrease compared to the previous year was recorded in gminas and cities with powiat rights. It is worrying because these units are very important local government investors.

The economic crisis related to the pandemic to the least affected the finances of the voivodeship government, which in 2020 maintained a trend of income growth, including self-revenue, comparable to previous years. In addition, they recorded a high increase in the operating surplus, while the investment expenditures of voivodeship governments were inhibited.

In 2021, the income situation of local governments at all levels improved, primarily in terms of self-revenue. Revenues from PIT and CIT increased at a rate similar to the years preceding the pandemic. In gminas and cities with powiat rights, subvention flow significantly increased, which resulted from a large increase in funds complementing the general subvention (compensation for the loss of revenue due to the PIT changes in the Polish Order) (Departament Analiz Ekonomicznych, 2022). The development opportunities of local governments also increased, in units of all levels there was a significant increase in the operating surplus. In most local governments, the level of investment expenditure also increased (after decreases recorded in 2019–2020).

Table 3. Changes in budget revenues and expenditures in 2020–2021 – by LGU category (previous year = 100%).

Specification	Gminas		Cities with powiat rights		Powiats		Voivodeships	
	2020	2021	2020	2021	2020	2021	2020	2021
Total revenue	110.3	109.7	106.8	110.7	112.6	104.3	111.7	108.9
Self-revenue	112.2	111.0	101.8	112.2	113.7	102.1	107.6	120.2
CIT, PIT	99.6	113.7	98.1	105.7	99.1	113.5	102.5	124.0
Targeted subsidies	112.1	96.0	117.2	102.4	106.2	95.1	112.7	89.4
General subsidy	103.9	129.4	109.8	121.3	115.2	111.5	125.3	114.5
Total expenditure	106.2	106.3	106.8	104.5	109.0	105.8	107.2	105.6
On-going expenditure	108.9	105.8	109.0	104.8	111.0	106.4	111.5	104.5
Investment expenditure	92.4	105.2	95.9	98.8	99.6	102.5	99.9	106.5
Operating surplus	98.1	147.5	52.1	321.8	98.1	137.0	114.7	137.7

Source: Own study based on (Ministerstwo Finansów, 2022; Krajowa Rada RIO, 2022; NIK, 2022).

An analysis of the changes in the budget revenues of local governments between 2018 and 2021 shows that in the first year of the pandemic the revenues of local governments not only did not decrease, but also maintained the rate of their growth, which was similar to the one in years preceding the pandemic. It can be concluded that the effects of the pandemic did not affect the overall income potential of LGUs. It is therefore reasonable to ask about the sources of the increase in budget revenues and their impact on the level of income autonomy of local government units. Income independence, understood as local government units being vested with their own sources of income and freedom of distribution of these funds, is measured by the percentage of own income in the total amount of budget income (Dziemianowicz, Kargol-Wasiluk, Bołtromiuk, 2018). The high share of own income in total income also affects the development opportunities of local governments, which provides the basis for shaping local development policy, supports long-term decisions regarding the level of investments and impacts loans taking. Simultaneously, the amount of generated self-revenue is connected to the activity of the residents and their assets, as well as the area development. For this reason, this indicator indirectly allows the assessment of the development potential of the gmina. On the other hand, external provision of budgets in the form of subsidies and grants is a form of direct influence by the state on local government finances (Szołno-Koguc, 2021). At the same time, the autonomy of the local government's expenditure policy is most strongly reduced by targeted subsidies (Swianiewicz, Łukomska, 2020).

Table 4. Structure of LGUs income by main sources in 2018–2021 (%)

Years	Total LGUs	Gminas	Cities with powiat rights	Powiats	Voivodeships
Self-revenue					
2018	49.2	43.3	61.3	36.0	53.2
2019	48.7	43.3	58.6	40.1	52.8
2020	48.0	44.0	55.9	40.5	50.9
2021	49.0	44.5	56.7	39.6	56.2
General subsidy					
2018	22.4	23.4	18.0	37.6	12.9
2019	22.2	22.5	18.2	37.9	13.7
2020	22.0	21.2	18.7	38.8	15.3
2021	24.7	25.0	20.5	41.5	16.1
Targeted subsidies					
2018	28.3	33.4	20.7	26.4	33.9
2019	29.1	34.2	23.2	22.0	33.5
2020	30.0	34.8	25.4	20.7	33.8
2021	26.3	30.5	22.8	18.9	27.7

Source: Own study based on (Krajowa Rada RIO, 2022).

The data presented in table 4 shows the impact of the effects of the pandemic on the income self-reliance of local government units. In 2019–2020, there was a visible downward trend in the share of LGUs' self-revenues in the total amount of budget revenues. The reason was the decline in the role of tax revenues, including income tax revenues. In

2020, LGUs in each voivodeship in Poland recorded a decrease in the share of personal and corporate income tax in budget revenues (Czudec, 2021). It can be assumed that this was the result of the economic crisis caused by the restrictions related to the pandemic. It should also be remembered that the decrease in tax revenues was also caused by legislative changes regarding tax law introduced in July 2019. The reduction in financial self-reliance in income aspects was also evidenced by an increase in the contribution of transfer income (subsidies and grants).

It can be noted that in 2021 the increase in the share of subsidies in the financing structure of LGUs, visible in all types of local governments, with a simultaneous increase in the share of own revenues, was inhibited.

In local government practice, the superiority of income independence over expenditure independence is often indicated, because the actual financial independence of a local government is determined by the level of income that it can freely dispose of to cover its expenses. Although the expenditure aspect of local government's financial independence is as important as its income aspect, the degree of expenditure independence is largely determined by the level and structure of budget revenues (Dziemianowicz et al., 2018). Income is crucial for determining the ability of local government units to carry out their tasks, including the financing the LGU's investments, which determine the development opportunities of these units, determining their expenditure.

The development opportunities of local government units – in addition to self-revenues – are also indicated by the size of investment expenditure. The indicator of the share of development expenditure in total expenditure reflects the investment activity of the local government and at the same time indicates the extent of the local government's spending autonomy. For investment expenditures are the type of expenditures which the local government units themselves decide to undertake (Surówka, 2013). Their size reflects the amount of funds that the local government unit can allocate to the implementation of development projects after funding ongoing (predominantly obligatory) tasks.

Table 5. Structure of LGU expenditure in 2018–2021 (%)

Years	LGUs' total	Gminas	Cities with powiat rights	Powiats	Voivodeships
On-going expenditures					
2018	79.6	79.4	83.1	79.1	64.1
2019	81.8	83.1	83.6	82.1	62.1
2020	83.7	85.2	85.3	83.6	64.5
2021	83.6	84.8	85.5	84.1	63.9
Investment expenditures					
2018	19.7	20.3	15.7	20.7	33.9
2019	17.5	16.6	15.1	17.6	36.3
2020	15.6	14.4	13.6	16.1	33.8
2021	15.2	14.3	12.8	15.6	34.1

Source: Own study based on (Krajowa Rada RIO, 2022).

In 2020, the structure of expenditures of local governments of all types continued the trend of an increase in on-going expenditures and a decrease in investment expenditures in relation to budget expenditures (Table 5). The increase in the share of on-going expenditure

of local government units was associated with an increase in the operating costs of local governments, including those related to the pandemic. Special pandemic-related expenditures aimed at ensuring epidemic safety, including meeting special sanitary conditions, were introduced in 2020 by legislation, which imposed obligations on local governments and their organizational units to counteract the pandemic and to counteract the effects of the pandemic (Ustawa..., 2020). However, the financial effects of these expenditures are difficult to determine due to the lack of supplementation of the budgetary classification, which would enable the identification of this type of expenditure (Nelicki, 2020).

All categories of LGUs also recorded a decrease in the share of investment expenditure in total expenditure, which indicates a decrease in the development opportunities of local governments and their independence in terms of expenditure. It is worth noting that 2021 brought a further decrease in the share of LGUs' investment expenditure in their total expenditure.

Table 6. LGUs budget outturn vs. debt

Years	Operating result in relation to total income (%)	Budget outturn (PLN thousand)	Liabilities in relation to total income (%)
2018	9.2	-7 539 849.0	30.2
2019	8.7	-1,706,179.7	29.5
2020	7.0	5,689,482.7	29.5
2021	11.0	17,441,838.0	27.3

Source: Own study based on (Krajowa Rada RIO, 2019–2022).

In 2018–2019, the budgetary expenditures of LGUs exceeded revenues, which resulted in a deficit at the end of the year (Table 6). In 2020, local government budgets closed with a surplus of PLN 5.69 billion, despite the fact that local governments originally planned a deficit of PLN 21.17 billion, which indicates that local authorities are being very cautious when implementing their budgets under pandemic conditions. This was associated with a significant reduction in local government investment activity. It was connected to the deteriorating economic situation in Poland and the increasing uncertainty about the implementation of the revenue plan by local authorities. In 2021, the implementation of LGUs' budgets brought a surplus for the second year in a row (PLN 17.4 billion, with a planned deficit of PLN -19.4 billion). In addition to further reductions in local government investment, the PLN 8 billion funding that local governments received in December 2021 as a supplement to the general subvention (Ustawa..., 2021) contributed to the net positive budget result. The budget surplus was recorded at the level of all types of LGUs.

In 2018–2020, LGUs' debt systematically increased (on average by 10% per year). The period of the pandemic did not significantly increase the growth of debt (mainly due to postponement of the investments). However, in 2021, the liabilities of the local government sector increased by only 1.4% compared to the previous year. At the same time, the relationship between liabilities and income stabilized. The debt-to-income ratio in the entire local government sector decreased in this period from 30.2% to 27.3%. As in previous years, in 2021 the highest debt-to-income ratio occurred in cities with powiat rights (40.6%). The lowest share of debt-to-income ratio occurred powiats (17.2%), and the

highest decrease in the value of said ratio was achieved by voivodships (to 24.9%). It should be noted that local government debt constituted a small part of the debt of the entire public finance sector (7.9%).

The difficult financial situation of LGUs in 2020 is evidenced by the reported decrease in the operating surplus. The ratio of operating surplus to total income shows the investment opportunities of LGUs and the ability to increase current expenditure (Satoła, 2015). Voivodships had the highest value of this indicator, while cities with powiat rights had the lowest. In most local governments, the operating surplus in relation to income decreased in 2020, with the largest decrease visible in cities with powiat rights. The voivodeships were characterized by a high and stable level of surplus. In 2021, the financial situation of local governments improved. In all types of units there was a significant increase in the operating surplus (Table 7).

Table 7. The operational outturn (gross and net) to total revenue (%)

Years	Gminas		Cities with powiat rights		Powiats		Voivodeships	
	Operational outturn in relation to total income (%)							
	gross	net	gross	net	gross	net	gross	net
2018	8.9	5.6	8.4	4.8	7.4	4.7	18.2	12.6
2019	8.4	4.9	6.8	3.2	9.0	5.7	19.6	14.6
2020	7.5	4.4	3.3	1.0	7.8	5.4	20.1	16.0
2021	10.1	7.3	9.6	6.5	10.3	8.0%	25.4	21.1

Source: Own study based on (Krajowa Rada RIO, 2022).

Obtaining an operating surplus is necessary for the local government finances, but the gross operating surplus does not include expenses intended for repayment of loans and borrowings (expenses). Therefore, the assessment of the financial situation of local governments should also take into account the net operating surplus indicator, which reflects their investment opportunities (Swianiewicz, Łukomska, 2021). The (gross) operating surplus is calculated in accordance with the methodology used by the Ministry of Finance by deducting the LGUs debt repayment. The use of the net operating surplus is justified due to the persistently high indebtedness of local governments. Significant differences in the gross and net surplus values indicate a high burden of debt repayment on the budgets of local government units. Cities with powiat rights faced the most difficult situation among all types of local governments. In 2020, they generated a very low net operating surplus. They also had the highest indebtedness ratio among the different types of local governments.

5. CONCLUSIONS

The economic downturn in Poland caused by the COVID-19 epidemic was reflected in the financial health of the state budget and consequently also had negative consequences for local government finances. The economic crisis affected the functioning of local government units at all levels. It can be noted, however, that the crisis affected local governments unevenly. The effects of the pandemic, visible in 2020, had the least impact on the financial situation of voivodeship. These units mainly maintained a high and stable

level of operating surplus. They also reduced the liability ratio and their investment capacity decreased to the smallest extent.

The economic downturn had a negative impact primarily on cities with powiat rights, where the surplus of on-going income over current expenditure almost halved compared to 2019, while the net operating surplus was barely over PLN 0. The development opportunities of these units decreased, which was reflected by the large decrease in investment expenditure. Self-revenues from taxes, which in cities have a significant position in total revenues, also fell.

It should be emphasized that the actual severity of local government financial problems in 2020 turned out to be less than anticipated. In fact, local governments maintained their overall revenue potential comparable to their planned level as well as that of the previous year. However, the structure of local government revenues has deteriorated as the role of revenues transferred from the state budget has increased. This led to a diminution of financial independence, which is the basis for the operation of local governments. The deterioration of the financial condition is also evidenced by the decrease both in the operating surplus and investment expenditure recorded in local governments in 2020. The deterioration of the operating result not only reduced the development opportunities of local governments, it also increased the risk of a loss of liquidity and could lead to a situation where the day-to-day operations of local governments would be at risk.

The deterioration of the financial situation of LGUs in 2020 is primarily a result of income factors influenced by both the economic situation and the direction of legislative changes of tax policy. In addition to the economic situation, legislative changes were an important factor negatively affecting the profitability of local governments. Therefore, national-level policies resulted in a reduction of the financial independence of local governments. The dependence of local government finances on external factors, including economic fluctuations, and the related volatility of local government revenues pose a threat to the stability of financing public services, which are provided by local governments in Poland.

In the crisis situation, the unfavorable phenomena present in recent years in Polish LGUs finances became more visible (among other things, limiting the financial independence of LGUs by the state, imposing additional tasks on LGUs without adequate financial compensation, or introducing new debt limits). Given this, changes in legal regulations should focus on the search for and implementation of such solutions that will stabilize the financial management of local governments to strengthen their financial independence, which is the basis of LGUs autonomy.

REFERENCES

- Bank Gospodarstwa Krajowego (2020). *Badanie sytuacji finansowej jednostek samorządu terytorialnego w Polsce w świetle COVID-19*. Warszawa.
- Bartle, J.R., Ebdon, C., Krane, D. (2003). *Beyond the property tax: Local government revenue diversification*, *Journal of Public Budgeting*. "Accounting & Financial Management", 15(4).
- Bieniasz, A., Gołaś, Z. (2015). *Kondycja finansowa gmin wiejskich Wielkopolski w latach 2007-2011*. „*Journal of Agribusiness and Rural Development*”, 35(1). DOI: 10.17306/JARD.2015.3.
- Czudec, A. (2021). *Finanse jednostek samorządu terytorialnego w okresie pandemii*. „*Finanse Komunalne*”, 5.

- Departament Analiz Ekonomicznych (2022). *Finanse JST. Raport roczny 2021. Analizy Sektorowe* [Access: 20.03.2023]. Access on the internet: https://www.pkobp.pl/media_files/8d32535e-afdf-4c3b-83a9-fee876641902.pdf.
- Dziemianowicz, R., Kargol-Wasiluk, A., Bołtromiuk, A. (2018). *Samodzielność finansowa gmin w Polsce w kontekście koncepcji good governance*. „*Optimum. Economic Studies*”, 4(94). DOI: 10.15290/oes.2018.04.94.16.
- Filipiak, B. (2009). *Metodyka kompleksowej oceny gospodarki finansowej jednostki samorządu terytorialnego*. Warszawa: Difin.
- Grzebyk, M., Stec, M., Hejdukova, P. (2022). *Financial Situation and Sustainable Development of Territorial Units – a Comparative Analysis of Polish Voivodeships*. „*Humanities and Social Sciences*”, 29, No. 3.
- Groves, S.M., Godsey, W.M., Shulman, M.A. (1981). *Financial Indicators for Local Government*. “*Public Budgeting & Finance*”, 1(2). DOI: 10.1111/1540-5850.00511.
- Hendrick, R. (2004). *Assessing and Measuring the Fiscal Health of Local Governments: Focus on Chicago Suburban Municipalities*. “*Urban Affairs Review*”, 40(1). DOI: 10.1177/1078087404268076.
<https://bdl.stat.gov.pl/bdl>.
- Kata, R., Czudec, A., Zajac, D., Zawora, J. (2022). *Gospodarka finansowa jednostek samorządu terytorialnego – wybrane zagadnienia*. Rzeszów: Wydawnictwo UR.
- Krajowa Rada RIO (2019, 2020, 2021, 2022). *Sprawozdanie z działalności regionalnych izb obrachunkowych i wykonania budżetu przez JST w latach 2018–2021* [Access: 30.06.2023]. Access on the internet: <https://www.rio.gov.pl>.
- Kwiatkowski, K., Tyszkiewicz, W., Wójcik, M. (2021). *Finanse samorządów terytorialnych po pandemii. Od kryzysu do rozwoju*. Raport Fundacji Ośrodek Rozwoju Polski [Access: 30.03.2023]. Access on the internet: https://www.senat.gov.pl/gfx/senat/userfiles/_public/k10/senat/zespoly/samorzad/raport_finanse-samorzadow-po-pandemii_forp_fpk_2021_11_25-1.pdf
- Łukomska-Szarek, J., Zawora, J., Kawecki, M. (2018). *Metody analityczne w zarządzaniu finansami jednostek samorządu terytorialnego*. Częstochowa: Polskie Towarzystwo Ekonomiczne.
- Ministerstwo Finansów (2022). *Informacja z wykonania budżetów JST w 2021 roku* [Access 29.07.2022]. Access on the internet: <https://www.gov.pl/web/finanse/sprawozdanie-roczne-za-2021>
- (2021). *Wskaźniki do oceny sytuacji finansowej jednostki samorządu terytorialnego w latach 2018–2020* [Access: 30.06.2023]. Access on the internet: Portal Gov.pl (www.gov.pl).
- (2023). *Zadłużenie sektora finansów publicznych* [Access: 29.07.2023]. Access on the internet: <https://www.gov.pl/web/finanse/zadluzenie-sektora-finansow-publicznych>.
- Musgrave, R. A. (1983). *Who Should Tax, Where, and What?* [in:] Charles, E. McLure, Jr., ed., *Tax Assignment in Federal Countries*. Canberra: Centre for Research on Federal Financial Relations, Australian National University.
- Najwyższa Izba Kontroli (2022). *Analiza wykonania budżetu państwa i założeń polityki pieniężnej w 2021 roku* [Access: 30.03.2023]. Access on the internet: <https://www.nik.gov.pl/plik/id,26023.pdf>.
- Nelicki, A. (2020). *Wpływ ustawodawstwa okresu pandemii COVID-19 na finanse jednostek samorządu terytorialnego*. Warszawa: Fundacja im. Stefana Batorego [Access: 20.07.2021]. Access on the internet: <https://www.batory.org.pl/wp-content/uploads/2020/11/Wp%C5%82yw-ustawodawstwa-okresu-pandemii-COVID-19-na-finanse-JST.pdf>.

- OECD (2020). *Wpływ pandemii COVID-19 na samorzady lokalne i regionalne w UE: główne wnioski ze wspólnego badania KR-OECD* [Access 29.07.2022]. Access on the internet: <https://cor.europa.eu/pl/news/Pages/econ-cor-oecd-survey-covid-19-results.aspx>.
- Owsiak, S. (2011). *Sytuacja finansowa jednostek samorządu terytorialnego w Polsce w warunkach spowolnienia gospodarczego*. „*Ekonomiczne Problemy Usług*”, No. 76.
- Poniatowicz, M. (2015). *Determinanty autonomii dochodowej samorządu terytorialnego w Polsce*. „*Nauki o Finansach*”, 1(22). DOI: 10.15611/nof.2015.1.01.
- Ritonga, I.T., Clark, C., Wickremasinghe, G. (2012). *Assessing Financial Condition of Local Government in Indonesia: An Exploration*. „*Public and Municipal Finance*”, No. 1(2).
- Rivenbark, W.C., Roenigk, D.J., Allison, G.S. (2009). *Communicating Financial Condition to Elected Officials in Local Government*. „*Popular Government*”, 75(1).
- Rocznik Statystyczny Rzeczypospolitej Polskiej (2022). Warszawa: GUS.
- Satoła, Ł. (2015). *Kondycja finansowa gmin w warunkach zmiennej koniunktury gospodarczej*. „*J. Agribus. Rural Dev.*”, No. 1(35).
- Stanny, M., Strzelczyk, W. (2018). *Kondycja finansowa samorządów lokalnych a rozwój społeczno-gospodarczy obszarów wiejskich*. Warszawa: Wydawnictwo Naukowe Scholar Spółka z o.o.
- Surówka, K. (2013). *Samodzielność finansowa samorządu terytorialnego w Polsce*. Warszawa: PWE.
- Swianiewicz, P., Łukomska, J. (2020). *Finanse samorządu terytorialnego w dobie pandemii*. Warszawa: Fundacja im. Stefana Batorego [Access: 30.03.2023]. Access on the internet: <https://www.batory.org.pl/wp-content/uploads/2020/11/Finanse-samorzadu-w-dobie-pandemii.pdf>.
- (2021). *Kondycja finansowa samorządów u progu pandemii. Ranking nadwyżki operacyjnej netto*. „*Wspólnota*”, 8.
- Szołno-Koguc, J. (2021). *Samodzielność dochodowa jednostek samorządu terytorialnego – aspekty teoretyczne*. „*Studia BAS*”, 1(65).
- Wang, X., Dennis, L., Tu, Y. S. J. (2007). *Measuring Financial Condition: A Study of US States*. „*Public Budgeting & Finance*”, 27(2). DOI: 10.1111/j.1540-5850.2007.00872.x.
- Zawora, J. (2018). *Synthetic Assessment of Financial Situation of Local Governments in Podkarpackie Voivodeship Compared with other Polish Provinces*. „*Lex Localis – Journal of Local Self-Government*”, Vol. 16, No. 2.

LEGAL ACTS

- Ustawa z dnia 14 października 2021 r. o zmianie ustawy o dochodach jednostek samorządu terytorialnego oraz innych ustaw (Dz.U. z 2021 r., poz. 1927; Journal of Laws. 2021, item 1927).
- Ustawa z dnia 31 marca 2020 r. o zmianie ustawy o szczególnych rozwiązaniach związanych z zapobieganiem, przeciwdziałaniem i zwalczaniem COVID-19, innych chorób zakaźnych oraz wywołanych nimi sytuacji kryzysowych oraz niektórych innych ustaw (Dz.U. z 2020 r., poz. 568; Journal of Laws. 2020, item 568).
- Ustawa z dnia 30 sierpnia 2019 r. o zmianie ustawy o podatku dochodowym od osób fizycznych oraz ustawy o zmianie ustawy o podatku dochodowym od osób fizycznych oraz niektórych innych ustaw (Dz.U. z 2019 r., poz. 1835; Journal of Laws. 2019, item 1835).
- Uchwała nr 102 Rady Ministrów z dnia 23 lipca 2020 r. w sprawie wsparcia na realizację zadań inwestycyjnych przez jednostki samorządu terytorialnego (M.P. z 2020 r., poz. 662; M.P. 2020 item 662).

ADDITIONAL INFORMATION

The Journal annually publishes a list of reviewers: in the last issue of the quarterly – No. 4 (2023) and on the website:

<https://journals.prz.edu.pl/hss/recenzenci>

Previous name of the Journal: *Ekonomia i Nauki Humanistyczne*, ISSN 1234-3684

<https://hss-arch.prz.edu.pl>

The journal uses for reviewing, as described on its website:

<https://journals.prz.edu.pl/hss/etyka>

Review's form available at:

<https://journals.prz.edu.pl/hss/recenzja>

Instruction for Authors

<https://journals.prz.edu.pl/hss/about/submissions>

Contact details to Editorial Office available at:

<https://journals.prz.edu.pl/hss/about/contact>

Electronic version of the published articles available at:

<https://journals.prz.edu.pl/hss/issue/archive>

Reviewing standards, information for authors, the review form, instruction for authors and contact details to HSS Editors and to Publishing House are also published in the fourth number of Humanities and Social Sciences, 30, No. 4 (2023).

Manuscript completed in September 2023.

Printing Publishing House, 12 Powstańców Warszawy Ave., 35-959 Rzeszów

DOCUMENT
CREATED
WITH



PDF
COMBINER

PDF Combiner is a free application that you can use to combine multiple PDF documents into one.

Three simple steps are needed to merge several PDF documents. First, we must add files to the program. This can be done using the Add files button or by dragging files to the list via the Drag and Drop mechanism. Then you need to adjust the order of files if list order is not suitable. The last step is joining files. To do this, click button Combine PDFs.

Main features:

secure PDF merging - everything is done on your computer and documents are not sent anywhere

simplicity - you need to follow three steps to merge documents

possibility to rearrange document - change the order of merged documents and page selection

reliability - application is not modifying a content of merged documents.

Visit the homepage to download the application:

www.jankowskimichal.pl/pdf-combiner

To remove this page from your document, please donate a project.