



Krakow
University
of Economics

Krakow Review of Economics and Management

Zeszyty Naukowe

No 1 (1007) / 2025

ISSN 1898-6447
e-ISSN 2545-3238



Krakow
University
of Economics

Krakow Review of Economics and Management

Zeszyty
Naukowe

No 1 (1007) / 2025

ISSN 1898-6447
e-ISSN 2545-3238

Scientific Board

Andrzej Antoszewski (Poland), *Josef Arlt* (Czech Republic), *Slavko Arsovski* (Serbia),
Daniel Baier (Germany), *Hans-Hermann Bock* (Germany), *Ryszard Borowiecki* (Poland),
Giovanni Lagioia (Italy), *Tadeusz Markowski* (Poland), *Martin Mizla* (Slovakia),
David Ost (USA), *Józef Pociecha* (Poland), *Vesna Žabkar* (Slovenia)

Editorial Board

Aleksy Pocztowski (Editor-in-Chief), *Sergiu Baltatescu* (Romania), *Mehmet Hüseyin Bilgin* (Turkey),
Joanna Dźwończyk, *Jan Fidrmuc* (France), *Juan José García Machado* (Spain), *Wojciech Giza*,
Michał Halagarda, *Salvatore Ingrassia* (Italy), *Wojciech Jarecki*, *Tomasz Kafel*,
Ryszard Kowalski (Editorial Secretary), *Katarzyna Maj-Serwatka* (Editorial Secretary),
Alexander Mihailov (Great Britain), *Hana Pačaiová* (Slovakia), *Paulo Sampaio* (Portugal),
Miladin Stefanović (Serbia), *Wanda Sułkowska*, *Monika Szaraniec*, *Suat Teker* (Turkey),
Mladen Vukomanović (Croatia), *Stanisław Wanat*, *Angelika Wodecka-Hyjek* (Editorial Secretary)

Statistical Editor

Paweł Ulman

Online Editor

Sławomir Wawak

Language Editors

Owen Braithwaite, *Seth Stevens*

Proofreading

Patrycja Dinh Ngoc

Design and layout

Marcin Sokołowski

The journal is indexed by:

BazEkon (bazekon.uek.krakow.pl), CEEOL (www.ceeol.com), CEJSH (cejsh.icm.edu.pl), DOAJ (doaj.org),
EBSCO (www.ebsco.com), ERIH PLUS (kanalregister.hkdir.no/publiseringskanaler/erihplus/)
and ICI World of Journals (journals.indexcopernicus.com)

© Copyright by Krakow University of Economics, Kraków 2025

Content in this issue is licensed under a Creative Commons Attribution 4.0 License (CC BY 4.0)

ISSN 1898-6447

e-ISSN 2545-3238

Until 2023: Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie/Cracow Review
of Economics and Management

The online journal is both the primary and reference version

The articles are available on the journal's website: krem.uek.krakow.pl

and in the following databases: EBSCO, CEEOL and ICI World of Journals

Krakow University of Economics Press, Rakowicka 27, 31-510 Kraków, Poland,

phone +48 12 293 57 42, e-mail: wydaw@uek.krakow.pl, krem@uek.krakow.pl

Printing Center, Krakow University of Economics, Rakowicka 27, 31-510 Kraków, Poland

KREM, 2025, 1(1007)
ISSN 1898-6447
e-ISSN 2545-3238

Table of Contents

Katarzyna Woźniak-Jasińska Characteristics of the Labour Market and Innovations in the Digital Economy: Exploring Their Relationship in OECD Countries	5
Danuta Miłaszewicz Trust in Government as a Factor Influencing Acceptance of Behavioural Public Policy Instruments: Example of Poland and Selected Countries	29
Ewa E. Kiczmachowska The War-related Impacts on Tourism in Neighbouring Countries: Poland in the Face of the War in Ukraine	49
Mariia Rysin, Oleksandr Babych Digitalisation of Public Administration Services as Part of Digital Economy Development in Post-war Ukraine	75
Marcin Marchwiany, Justyna Bugaj Empowerment in Business: The Current State of Knowledge and Future Directions of Research	87
Krzysztof Gawron Analysis of the Feasibility of the Restructuring Plan: A Case Study of Poland	105
Joanna Lemańczyk, Magdalena Stefańska Do Consumers Want to Create Shared Values? Building Trust in Times of Whitewashing	127
Renata Winkler, Marta Moczulska Activity Patterns among Young Women: A Time Budget Perspective	147

Dariusz Nowak, Emil Nikolov, Joanna Wiśniewska	
Generation Z's Approach to Searching for and Performing Work	171
Hanna Czaja-Cieszyńska	
Różnorodność płci w raportach zrównoważonego rozwoju w Polsce	189

KREM, 2025, 1(1007): 5–27
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18630>

Characteristics of the Labour Market and Innovations in the Digital Economy: Exploring Their Relationship in OECD Countries

Katarzyna Woźniak-Jasińska

Poznań University of Economics and Business, Institute of Economics, Department of Macroeconomics and Development Research, Niepodległości 10, 61-875 Poznań, Poland,
e-mail: katarzyna.wozniak-jasinska@ue.poznan.pl, ORCID: <https://orcid.org/0000-0002-9077-328X>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Woźniak-Jasińska, K. (2025). Characteristics of the Labour Market and Innovations in the Digital Economy: Exploring Their Relationship in OECD Countries. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 5–27. <https://doi.org/10.15678/krem.18630>

ABSTRACT

Objective: This paper examines the relationship between labour market characteristics and innovations in the OECD countries. Specifically, this study adopts a quantitative approach, primarily focused on employing correlation analysis to explore the relationship between labour market institutions, labour market outcomes, and indicators measuring innovations in the OECD countries.

Research Design & Methods: The study uses data from a diverse range of OECD countries to analyse the relationship between institutional frameworks, labour market outcomes and various dimensions of innovation. Through a correlation analysis of key indicators such as innovation and technological adoption rates, employment and participation patterns, and labour market institutions, the study highlights various ways in which labour markets respond to the demands of an increasingly digitised economy.

Findings: The results indicate that investments in information and communication technology in the OECD countries are positively associated with public spending on labour market policies.

Additionally, the empirical analysis indicates a positive relationship between people employed in high-skill occupations and indicators measuring innovation. In contrast, the relationship between people employed in low and medium-skill occupations and indicators measuring innovation was negative. Furthermore, stricter employment protection legislation is usually associated with lower values in indicators measuring innovation in the OECD countries. The results also indicate that the relationship between indicators measuring innovation and employment can vary across different sectors.

Implications/Recommendations: The findings underline the critical importance of institutional dynamics in fostering digital progress and provide essential insights for researchers, policymakers, and others interested in the labour markets in the digital age.

Contribution: The originality of the study lies in its extensive discussion of the impact of innovation and new technologies on labour markets in the digital economy, as well as its analysis of relationships between labour market outcomes, labour market institutions and indicators measuring innovation.

Article type: original article.

Keywords: digital economy, Industry 4.0, innovation, labour market, labour market institutions.

JEL Classification: J08, J88.

1. Introduction

The functioning of labour markets has consistently been a concern for OECD policymakers. It is also a central focus of the OECD Jobs Strategy (OECD, 2022). Therefore, labour market policy remains one of the most critical policy areas, and its significance has further increased during the COVID-19 pandemic (Costa Dias *et al.*, 2020) because both employees and employers anticipated support from the state. Moreover, recent technological advances, often referred to as Industry 4.0 or the fourth industrial revolution, have led to many fundamental changes in the labour market. New technologies and innovations are reshaping labour markets, affecting labour supply and demand, wages, working conditions, and organisational structures. On one hand, these innovations can create job opportunities and new forms of work. On the other hand, they can lead to job displacement or even the replacement of human workers by automation and robots. Consequently, innovation in the economy may influence various labour market outcomes, including employment rates, labour force participation rates, and wage levels.

What is more, it is generally held that flexible labour markets can facilitate the rapid adjustment of employees to changes, including technological advancements. Additionally, they enable employees to respond quickly to technological changes. Therefore, in countries with more flexible labour markets, there may be a greater willingness to invest in innovation. Furthermore, labour market institutions that

support training and education programmes can positively influence digitalisation by nurturing employees with relevant digital skills.

Thus, the study aims to assess the relationship between labour market characteristics and innovation in the OECD countries. More specifically, this study adopts a quantitative approach, primarily focused on employing correlation analysis to explore the relationship between labour market institutions, labour market outcomes, and indicators measuring innovations in the OECD countries. The empirical analysis was conducted for the period 2011–2021 and was based on the data collected from the OECD database.

This paper contributes to the debate on the labour market in the digital economy through an empirical analysis of the relationship between labour market characteristics and variables measuring innovation in the OECD countries. In particular, the originality of the study lies in its extensive discussion of the impact of innovation on labour markets in the digital economy, as well as its analysis of relationships between labour market outcomes, labour market institutions and indicators measuring innovation. Additionally, the study will assist labour market stakeholders, scholars, policymakers, and others in more efficiently addressing the challenges posed by the fourth industrial revolution.

The paper is organised as follows: The first section is the introduction. The second section discusses the impact of innovations on the labour market and approaches and indicators measuring innovation in the digital economy. The third section presents the methodology of the empirical research, while the fourth section provides the results of the empirical analysis, examining the relationship between labour market characteristics and variables measuring innovation in the OECD countries. Finally, the last section concludes the paper.

2. Innovations and the Labour Market in the Digital Economy: Approaches, Measures and Implications

The fourth industrial revolution, known as Industry 4.0¹, drives many significant changes in the economy. Specifically, innovations and new technologies influence many aspects of labour markets, such as working conditions, wages and work environment, creating both opportunities and challenges for employees and employers (Rotar, 2022). The digital transformation may have a positive impact on economic growth and labour markets through the implementation of innovative technologies and productivity improvements (Acemoglu & Restrepo, 2020). Innovations and new technologies also contribute to the creation of new jobs and increase competitive-

¹ Industry 4.0 is used to express the ongoing advances in the following fields, artificial intelligence, innovations, robotics, the Internet of Things, 3-D printing, autonomous vehicles, nanotechnology, biotechnology, energy storage, materials science, and quantum computing (Schwab, 2015).

ness (OECD, 2016). Existing studies also indicate that innovations will increase the demand for employees who perform innovative and creative tasks (Schroeder, Greef & Schreiter, 2017).

Conversely, innovations and new technologies can displace employees in some occupations, exacerbating existing labour market disparities, increasing inequality, and creating digital divides (OECD, 2016). One of the main challenges of the new labour market is also technological unemployment. Frey and Osborne (2017) indicate that approximately 47% of jobs in the USA are at risk of computerisation and automation in the next decade or two. Similarly, Arntz, Gregory and Zierahn (2016) estimate that 9% of jobs in 21 OECD countries can be automated. Additionally, Acemoglu and Restrepo (2020) state that industrial robots negatively impact wages, despite leading to higher productivity. Studies also indicate that routine tasks are most at risk of being replaced by machines and robots (Agolla, 2018).

What is more, labour market institutions will play an important role in shaping the benefits and addressing the challenges of these innovations and new technologies. The literature indicates that flexible labour markets positively influence labour market outcomes (Kryńska, 2004). Moreover, labour market regulations regarding part-time or temporary employees might impact how organisations engage with remote work, the gig economy and digital platforms (Braesemann *et al.*, 2022; Wojtkowiak, 2023). Additionally, the involvement of trade unions in negotiations regarding the use of innovations and new technologies in the workplace may lead to significant changes in labour markets, particularly in aspects such as remote work and data privacy (Pilc *et al.*, 2022). Therefore, labour market institutions that provide employees with relatively high benefits may allocate more funds for training to improve digital skills, consequently supporting them in adapting to new market requirements. However, results may vary depending on the influence of collective bargaining (Corrocher *et al.*, 2023).

The role of innovation in the labour market is significant and may result in both positive and negative impacts. However, how innovations and new technologies will shape the labour market in the digital economy is also determined by labour market institutions. Various approaches to measuring individual aspects of the digital economy have been presented so far. The demand for new indicators that measure the digital economy is particularly crucial due to the growing impact of new technologies and digitalisation on economies, especially their potential to transform labour markets. Measuring innovations and the digital economy primarily relies on creating rankings that incorporate indicators predominantly assessing the use of digital technologies across various economic sectors. These rankings are typically developed by international organisations, such as the European Union (EU), the Organisation for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) etc. As early as 2004, the G20 Roadmap

for Digitalisation and the G20 Toolkit for Measuring the Digital Economy were developed. These indicators can be used to monitor the digital transformation, identify critical gaps, and address challenges that G20 countries face. The G20 Toolkit for Measuring the Digital Economy focuses on different indicators, and includes the following sources: the Organisation for Economic Co-operation and Development, the International Labour Organization, the European Union, the World Bank, the United Nations Conference on Trade and Development, the International Monetary Fund, and the International Telecommunication Union (OECD, 2018).

Another approach was adopted by the European Commission, which has devised the Digital Economy and Society Index (DESI), which includes relevant indicators to assess the digital performance of EU countries and track their progress in digital competitiveness, along with the implementation of the Digital Single Market strategy. DESI encompasses four main policy areas, overall 32 indicators, including connectivity (such as mobile broadband and its characteristics), human capital, integration of digital technology and digital public services (European Commission, 2022a, 2022b). On the other hand, the United Nations Conference on Trade and Development, within the Working Group on Measuring E-Commerce and the Digital Economy, developed information economy indicators focused especially on information and communication technology (ICT) use in business and ICT trade (UNCTAD, 2024). Similarly, the OECD has been working on the measurement of innovations and the digital economy since the late 1990s. In 2017, the OECD initiated the Going Digital: Making the Transformation Work for Growth and Well-being project, aimed at understanding the digital transformation and implementing policies to foster a beneficial digital economy and society. This project includes the following areas: innovation, access, use, society, trust, jobs, and market openness (OECD, 2018, 2024d).

However, the main issue with particular rankings is that the indicators and measures used are not based on a precise definition of the digital economy and often employ different methodologies. The need for the development of a generally agreed-upon and actionable definition of the digital economy was expressed by the International Monetary Fund, which indicated that the lack of this definition is a hurdle to measuring the digital transformation of an economy (IMF, 2018). So far, the most progress in defining the digital economy has been made by the OECD which developed this definition on the basis of the survey among countries participating in the Digital Economy Task Force (DETF). According to the OECD, the digital economy is defined through the following tiers (OECD, 2020):

- the core measure of the digital economy covers activity from producers of ICT goods and information and ICT services,
- the narrow measure involves the core sector and economic activity of firms involved in and reliant on digital inputs,

– the broad measure includes both the core and narrow sectors, as well as economic activity of firms enhanced by the use of inputs.

Based on a framework including the core, narrow, and broad tiers of the digital economy, OECD developed the following definition, which was also adopted in this paper: the digital economy includes all economic activity reliant on, or significantly enhanced by the use of digital inputs, involving digital technologies, digital services, digital data and digital infrastructure. The main argument in favour of adopting this definition is the fact that this definition of the digital economy also encompasses the flexible approach developed by UNCTAD and the work of Bukht and Heeks (2017) and was recognized to be most useful to both economists and policy makers (OECD, 2020). Based on these implications and considering the geographical scope of this study, the empirical analysis used the OECDs' approach and measures in the area of innovation provided within the Going Digital Toolkit project².

Spending on research and development (R&D) is a key driver of digital innovation and a large share of the spending is contributed by the private sector (OECD, 2019). What is more, increasing national investment in research and development requires the combination of efforts of public and business sectors. In more developed countries, the business sector plays a crucial role in R&D work, by developing new products and business processes that develop existing knowledge and create new knowledge. Furthermore, sectors such as ICT equipment and information services emerge as particularly intensive in R&D efforts due to the fact that investment in information and communications technologies (ICTs) is a crucial condition for businesses to use digital technologies (OECD, 2018, 2024e). Based on these circumstances, the empirical analysis includes the following measures: ICT investment and business R&D expenditure in information industries (all these indicators are measured as a share of GDP).

Another innovation indicator in the digital economy is the share of start-up firms (up to 2 years old) in information industries as a share of all businesses. This indicator is relevant for several reasons. First of all, relatively young companies enhance productivity as resources flow from less efficient firms to smaller and more dynamic businesses. Secondly, start-up firms drive innovation because they play a significant role in commercialising new technologies. Finally, this indicator is also used as a measure of business dynamism (OECD, 2024g). What is more, access to finance for innovative and new businesses includes both debt and equity finance. An important source of equity funding, especially for young and technology-based firms, is venture capital (VC). Therefore, this analysis also includes venture capital

² The paper does not include the following areas of the Going Digital Toolkit project: access, use, society, trust, and jobs because of the fact that the digital society is a broader term than the digital economy and includes digitalised interactions not involved in the GDP production boundary (e.g. the use of free digital platforms) (OECD, 2020).

investment in the ICT sector, measured as a share of GDP. This indicator provides an indication of the venture capital support directed to young businesses in the ICT sector (OECD, 2024i).

Finally, patents, software and organisational capital, especially in information and communication technologies (ICT) are also factors which significantly promote and contribute to the development of digital innovations (OECD, 2024f). Competing globally in ICT markets requires technological and innovative developments and attractive designs, while enabling consumers to use the new products on offer. Patents are also important because they protect technological inventions, such as products or processes providing, e.g. new technological solutions to problems (OECD, 2018, 2020). Therefore, the analysis also includes patents, measured as a country's share in "tradic" patent families, which are sets of patents registered in different national patent offices to protect the same invention. Moreover, another one of the indicators used to measure innovations is the top 10% most-cited documents in computer science, measured as a share of the top 10% ranked documents in all fields, which informs us about OECD countries relative contribution to advancing the state of knowledge in innovation (OECD, 2020, 2024h).

3. Data and Methodology

This paper examines the relationship between labour market characteristics and innovations in the OECD countries. Specifically, this study adopts a quantitative approach, primarily focused on employing correlation analysis to explore the relationship between labour market institutions, labour market outcomes, and indicators measuring innovations in the OECD countries. The geographical scope of the research covers countries that belong to the Organisation for Economic Cooperation and Development. Firstly, based on the literature review, the following research questions were formulated:

RQ1: What is the role of labour market institutions in new, digital labour markets?

RQ2: To what extent do labour market institutions correlate with innovation in the OECD countries?

RQ3: To what degree and direction are labour market outcomes associated with innovation in the OECD countries?

Then, the following hypotheses were formulated:

H1: There is a positive relationship between indicators measuring innovation and active labour market policies in the OECD countries.

H2: A higher level of unionisation in the OECD countries is positively correlated with investments in R&D activities.

H3: In the OECD countries with more flexible labour markets, there is a greater willingness to invest in R&D.

H4: The occupations that are least at risk from automation and robotisation are those that are highly skilled.

H5: The relationship between indicators measuring innovation and employment vary across sectors in the OECD countries.

Secondly, a set of indicators that measure innovations, labour market institutions, and labour market outcomes were collected (Table 1). The primary sources of data were the data published by the OECD. The selection of indicators was based on the availability of statistical data and substantive considerations. This ensured the comparability of the collected data and the consistency of the analysis.

The analysis covers the period from 2011 to 2021. The starting point for the analysis is the year 2011 when Industry 4.0 strategic initiative was implemented by the German government and consequently, the term “Industry 4.0” was made public (Rojko, 2017). However, the study employed the most recent data to capture the latest relationships between labour market characteristics and indicators measuring innovation in the OECD countries.

Table 1. Description of the Used Variables

Variable	Description	Source
Labour market outcomes variables		
Employment by education level		
Empl_bel	Employment rate of people with education below the upper secondary level (% of persons aged 25–64)	OECD (2024c)
Empl_sec	Employment rate of people with upper secondary, non-tertiary education (% of persons aged 25–64)	
Empl_tert	Employment rate of people with tertiary education (% of persons aged 25–64)	
Employment by occupation		
Empl_low	People aged 15–64 and employed in low (level 1) skilled occupation (% of total employment)	ILOSTAT (2024)
Empl_med	People aged 15–64 and employed in medium (level 2) skilled occupation (% of total employment)	
Empl_high	People aged 15–64 and employed in high (level 3 and 4) skilled occupation (% of total employment)	
Employment by activity		
Empl_agr	Employment in agriculture (% of total employment)	OECD (2024b)
Empl_ind	Employment in construction (% of total employment)	
Empl_man	Employment in manufacturing (% of total employment)	
Empl_ser	Employment in services (% of total employment)	

Table 1 cont'd

Variable	Description	Source
Labour market institutions variables		
LMP	Public spending on labour market (% of GDP)	OECD (2023)
ALMP	Public spending on active labour market (% of GDP)	
PLMP	Public spending on passive labour market (% of GDP)	
Training	Public spending on training (as a percentage of GDP)	
Strictness_r ^a	Strictness of employment protection – individual dismissals (regular contracts)	OECD.Stat (2023b)
Strictness_t	Strictness of employment protection – temporary contracts	OECD.Stat (2023c)
Union	Trade union density (as a percentage of employees)	OECD.Stat (2023d)
Innovations variables		
B_G_ICT	Business R&D expenditure information industries (ISIC 26 + 58 – 63) (% of GDP)	OECD (2024a)
ICT_invest	ICT investment (total; as a share of GDP)	OECD (2024e)
VC_invest	Venture capital investment in the ICT sector (as a share of GDP)	OECD (2024i)
Start-up	Share of start-up firms (up to 2 years old) in the business population (information industries (ISIC 26 + 58 – 63))	OECD (2024g)
S_patent	share of countries in “triadic” patent families	OECD.Stat (2023a)
Top_doc	Top 10% most-cited documents in computer science (as a share of the top 10% ranked documents in all fields)	OECD (2024h)

^a According to the OECD’s recommendations, version 3 of the indicator that measures employment protection was applied in the empirical analysis.

Source: the author.

In the third step, the descriptive statistics of the indicators were calculated (Table 2). The main statistical tool employed in this study was the correlation analysis that allows for an in-depth examination of the strength and nature of relationships between labour market characteristics and various dimensions of innovation. Subsequently, in the fourth step of the analysis, the correlation between labour market characteristics (labour market institutions and labour market outcomes) and indicators that measure innovations in the OECD countries was estimated. Finally, the results were discussed, and concluding remarks were presented.

4. Results

Table 2 presents the descriptive statistics of the analysed indicators, while Table 3 presents the matrix correlation of labour market policies and variables measuring

innovations in the OECD countries. In the descriptive statistics, panel data from 2011 to 2021 for OECD countries was considered while in the correlation analysis, cross-sectional data in 2021 for OECD countries were considered. The data indicate that the OECD countries exhibited diversity in terms of labour market institutions and outcomes, as well as in terms of variables measuring innovations (Table 2).

Table 2. Descriptive Statistics of the Variables

Variable	Min	Q ₁	Q ₂	M	Q ₃	Max	SD	Number of Countries	Number of Observations
Empl_bel	29.78	49.83	55.48	55.43	61.95	72.89	8.65	31	335
Empl_sec	54.07	70.93	74.30	74.73	79.91	86.61	5.84	31	335
Empl_tert	68.54	82.39	85.38	84.66	87.69	91.26	4.06	31	335
Empl_low	2.14	6.63	8.52	8.84	10.13	24.29	3.38	31	332
Empl_med	14.03	43.51	47.60	47.90	52.60	68.87	7.42	31	331
Empl_high	8.74	36.33	42.85	41.57	46.82	63.61	8.38	31	331
Empl_agr	0.76	1.84	3.09	4.70	4.90	40.12	6.36	31	336
Empl_ind	8.05	17.01	18.98	20.66	22.86	71.48	7.11	31	329
Empl_man	3.08	9.30	11.30	14.25	15.77	66.32	10.00	31	340
Empl_serv	46.19	58.37	66.14	63.94	70.87	87.81	8.98	31	325
LMP	0.24	0.66	1.18	1.47	2.15	4.8	0.97	31	335
ALMP	0.08	0.24	0.49	0.57	0.76	4.14	0.48	31	336
PLMP	0.12	0.37	0.62	0.89	1.35	3.36	0.67	31	336
Training	0.00	0.04	0.08	0.13	0.16	0.64	0.14	30	338
Strictness_r	0.09	1.64	2.33	2.15	2.55	4.13	0.73	25	276
Strictness_t	0.21	1.58	2.13	2.08	2.54	3.83	0.83	25	275
Union	4.50	13.20	17.85	26.12	32.55	69.60	18.46	21	237
B_G_ICT	0.01	0.13	0.26	0.40	0.39	2.71	0.48	32	279
ICT_invest	0.73	1.82	2.45	2.60	3.23	8.69	1.06	31	310
VC_invest	0.00	0.02	0.03	0.09	0.07	2.27	0.23	31	336
Start-up	8.50	24.8	30.2	30.10	35.05	60.3	8.46	29	248
S_patent	0.00	0.04	0.51	2.81	1.54	35.56	6.91	32	320
Top_doc	2.45	6.23	7.91	8.50	9.50	27.40	3.61	32	352

Notes: The table includes the values of selected indicators based on panel data from 2011 to 2021 for OECD countries.

Source: the author's calculations, based on the data collected from the sources listed in Table 1.

A positive and statistically significant relationship was observed between public spending on labour market policy (LMP, ALMP) and ICT investment (ICT_invest) (Table 3). Furthermore, a positive and statistically significant association was

observed between public spending on training (Training) and the variable which measures the top 10% most-cited documents in computer science (Top_doc) which confirms the first hypothesis. As pointed out, investment in ICT and advances in scientific knowledge are key to developing new digital technologies. First, investments in ICT can enhance the effectiveness of public spending on labour market policies, by facilitating better data management or developing more effective labour market programmes. Second, investments in ICT can improve job matching (e.g. through use of special online job platforms) and the organisation of online training. Finally, states may invest in ICT to promote innovation and create new jobs in the digital economy. Furthermore, the results suggest that ICT investments create online training programmes, which are often provided and supported for employees to acquire new skills through public spending on labour market policies. What is more, increasing investments in ICT promotes digital skills, which are crucial in the new labour market of the digital economy.

Table 3. Matrix Correlation of Labour Market Policies and Innovations

Variable	LMP	ALMP	PLMP	Training	B_G_ICT	ICT_invest	VC_invest	Start-up	S_patent	Top_doc
LMP	1									
ALMP	0.68*	1								
PLMP	-0.34	-0.07	1							
Training	0.67*	0.61*	-0.18	1						
B_G_ICT	-0.08	-0.04	-0.09	0.04	1					
ICT_invest	0.15*	0.14*	0.11	0.05	0.16*	1				
VC_invest	-0.11*	-0.12*	-0.10	-0.09	0.69*	0.10	1			
Start-up	-0.17*	-0.005	-0.25*	-0.05	0.09	-0.14*	0.06	1		
S_patent	-0.21*	-0.15*	-0.19*	-0.17*	0.25*	0.18*	0.12*	-0.06	1	
Top_doc	-0.01	-0.03	0.01	0.16*	0.31*	-0.20*	0.19*	0.06	-0.08	1

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author’s calculations, based on OECD (2023, 2024a, 2024e, 2024f, 2024g, 2024h, 2024i), OECD.Stat (2023a).

However, a negative relationship was observed between public spending on labour market policy (LMP and ALMP) and venture capital investment in the ICT (VC_invest), as well as between labour market policies (LMP, PLMP, ALMP, Training) and share of countries in “triadic” patent families (S_patent). This may be due to the fact that start-ups in the ICT sector often rely more on private financing and venture capital, which is consistent with the implications of international

organisations working on this phenomenon (OECD, 2024i). High public spending on LMP may indicate more demanding market conditions or high unemployment rates, which could reduce the willingness to start new businesses, particularly in the ICT sector or to develop patents. Apart from these, LMP expenditure may focus on unemployment support programmes and training that are not directly related to promoting innovation. These results can be also related to market conditions, especially during periods of economic decline when states typically spend more on labour market policies. During such times venture investors may be less likely to invest in start-ups, particularly those in the ICT sector. Relatively high expenditure on the labour market can also be a signal of a more interventionist governmental approach, which can potentially lead to the crowding out of private investments.

Table 4. Matrix Correlation of Labour Market Institutions and Innovations

Variable	Strictness_t	Strictness_r	Union	B_G_ICT	ICT_invest	VC_invest	Start-up	S_patent	Top_doc
Strictness_t	1								
Strictness_r	0.52*	1							
Union	0.10	0.13	1						
B_G_ICT	-0.22*	-0.14*	0.15*	1					
ICT_invest	-0.31*	-0.08	0.03	0.16*	1				
VC_invest	-0.27*	-0.18*	-0.07	0.69*	0.10	1			
Start-up	0.14*	0.17*	-0.20*	0.09	-0.14*	0.06	1		
S_patent	-0.37*	-0.44*	-0.21*	0.25*	0.18*	0.12*	-0.06	1	
Top_doc	0.25*	-0.03	0.10	0.31*	-0.20*	0.19*	0.06	-0.08	1

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author's calculations, based on OECD.Stat (2023a, 2023b, 2023c, 2023d), OECD (2024a, 2024e, 2024f, 2024g, 2024h, 2024i).

Table 4 displays the matrix correlation of labour market institutions and variables measuring innovations in the OECD countries. The results indicate a positive relationship between trade union membership and business R&D expenditure in information industries (B_G_ICT), which partially supports the second hypothesis, while there are negative relationships between trade union density and both the share of start-up firms in the business population and the share of countries in “triadic” patent families. Generally, these results suggest that, in the digital economy, trade unions may intensify their efforts to ensure that employees have access to the training necessary to keep up with technological advancements. In this new working environment, the involvement of trade unions may influence negotiations related to

new technologies and innovation, ensuring that adopted changes are beneficial for employees (e.g. Pilc *et al.*, 2022). Generally, the activities of trade unions may exert pressure on the state and organisations to create an innovative working environment, resulting in increased spending on R&D in economies.

On the other hand, the negative relationship between trade union density and the share of start-up firms in the business population, as well as the share of countries in “triadic” patent families may be related to the fact that start-ups are usually involved in high levels of innovation (including patents) and therefore typically require a more flexible labour force to quickly adapt to the demands of the digital economy. Thus, high union density may impose various constraints on hiring practices, reducing the flexibility needed in the digital economy and the new world of work. Stricter employment protection legislation (for both regular and temporary contracts) is usually associated with lower values in indicators measuring innovations in the OECD countries, which partially supports the third hypothesis (Fig. 1–3). However, in the case of start-up firms, this relationship indicates that strict employment protection may create an environment that is supportive of new business activities in some cases. This relationship needs further research, but it can be supposed that labour market stability resulting from strict employment protection encourages employers to start businesses because they feel more secure in a changing labour market. Additionally, as previously mentioned, the impact of innovation and new technologies on the labour market is considered complex, and as a result, outcomes might also vary depending on factors such as e.g. collective bargaining in wage determination (Corrocher *et al.*, 2023).

Finally, Table 5 presents the matrix correlation of labour market outcomes, including the employment rate of people with education below the upper secondary level, with upper secondary, non-tertiary education and with tertiary education, people aged 15–64 and employed in low (level 1), medium (level 2) and high (level 3 and 4) skilled occupations, as well as employment in agriculture, construction, manufacturing and services, along with variables measuring innovations in the OECD countries.

Regarding employment by education level, the findings show a positive relationship between almost all indicators measuring innovation in OECD countries and the employment rate of people with varying levels of education (Table 5, Fig. 4–5). First of all, expenditure on R&D, ICT investment, etc., can lead to the creation of new jobs and positions. This job creation is not limited to high-skill occupations but also involves opportunities for individuals with mid-level or even lower educational levels. Additionally, businesses operating in sectors focused on innovation and new technologies can stimulate growth in other sectors, resulting in new job opportunities for people with different educational qualifications.

Table 5. Matrix Correlation of Labour Market Outcomes and Innovations

Variable	Empl_bel	Empl_sec	Empl_tert	Empl_low	Empl_med	Empl_high	Empl_agr	Empl_ind	Empl_man	Empl_serv
Empl_bel	1									
Empl_sec	0.60*	1								
Empl_tert	0.30*	0.72*	1							
Empl_low	0.12*	-0.29*	-0.34*	1						
Empl_med	-0.28*	-0.29*	-0.40*	0.20*	1					
Empl_high	0.45*	0.41*	0.52*	-0.43*	-0.71*	1				
Empl_agr	-0.03	-0.29*	-0.06	0.30*	0.18*	-0.25*	1			
Empl_ind	-0.22*	0.02	0.06	-0.02	0.03	-0.11*	0.14*	1		
Empl_man	-0.12*	-0.08	0.09	0.17*	0.06	-0.15*	0.86*	0.87*	1	
Empl_serv	0.47*	0.10	0.06	-0.04	-0.60*	0.63*	-0.41*	-0.95*	-0.94*	1
B_G_ICT	0.15*	-0.01	-0.08	-0.09	-0.23*	0.22*	-0.24*	-0.24*	-0.18*	0.26*
ICT_invest	0.39*	0.47*	0.24*	-0.15*	-0.06	0.18*	-0.26*	-0.21*	-0.21*	0.22*
VC_invest	-0.06	-0.09	0.03	-0.16*	-0.28*	0.23*	-0.16*	-0.19*	-0.14*	0.30*
Start-up	0.09	-0.02	0.06	0.09	0.01	-0.09	0.25*	0.07	0.17*	-0.13*
S_patent	0.09	-0.08	-0.12*	0.08	0.28*	-0.26*	-0.18*	-0.15*	-0.13*	0.24*
Top_doc	0.02	-0.25*	-0.17*	-0.18*	-0.28*	0.32*	-0.09	0.11*	-0.09	0.28*

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author's calculations, based on: ILOSTAT (2024), OECD (2023a, 2024a, 2024b, 2024c, 2024e, 2024f, 2024g, 2024h, 2024i), OECD.Stat (2023a).

The results also indicate a positive relationship between people employed in high-skill occupations (levels 3 and 4) and indicators measuring innovation (Fig. 6). On the other hand, the relationship between people employed in low and medium-skill occupations (levels 1 and 2, respectively) and indicators measuring innovation was negative. This implies that high-skilled employees usually benefit from technological changes because their skills can be used or transformed into other jobs, and they are more likely to complement new technologies. In contrast, low-skilled employees usually need to reskill because their jobs are more likely to be automated, and routine tasks are more susceptible to being replaced by robots or automation (e.g. the study by Frey & Osborne, 2017; Schroeder, Greef & Schreiter, 2017; Agolla, 2018). These results support the fourth hypothesis that the occupations that are least at risk from automation and robotisation are those that require high skill levels. Therefore, adequate social protection is crucial to enable a successful transition for all, particularly through training courses (OECD, 2019).

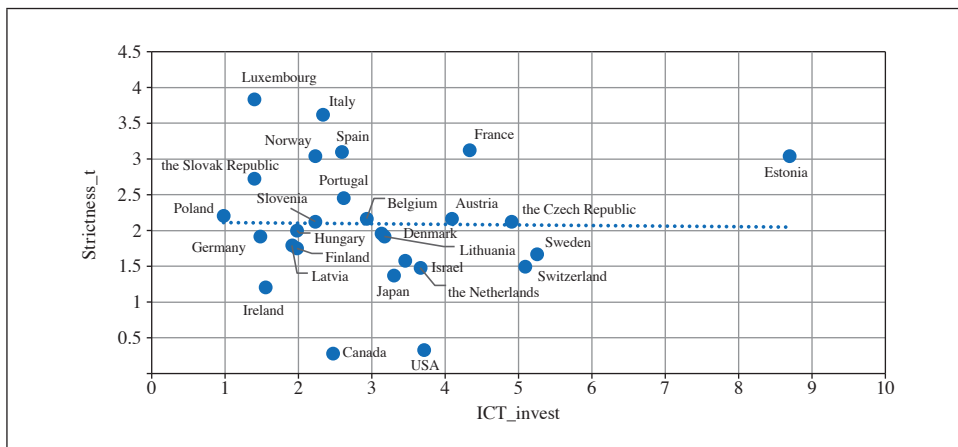


Fig. 1. Correlations between Strictness_t and ICT_invest (-0.31*)

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The values of correlation and their significance were shown in parentheses. The figure shows the results for 32 OECD countries in 2021 (due to insufficient data the United Kingdom was excluded). Due to limitations in the size of the article, the figure is limited to presenting relatively strong correlations, i.e. > |0.3|. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author's calculations, based on OECD.Stat (2023a, 2023b, 2023c), OECD (2024e).

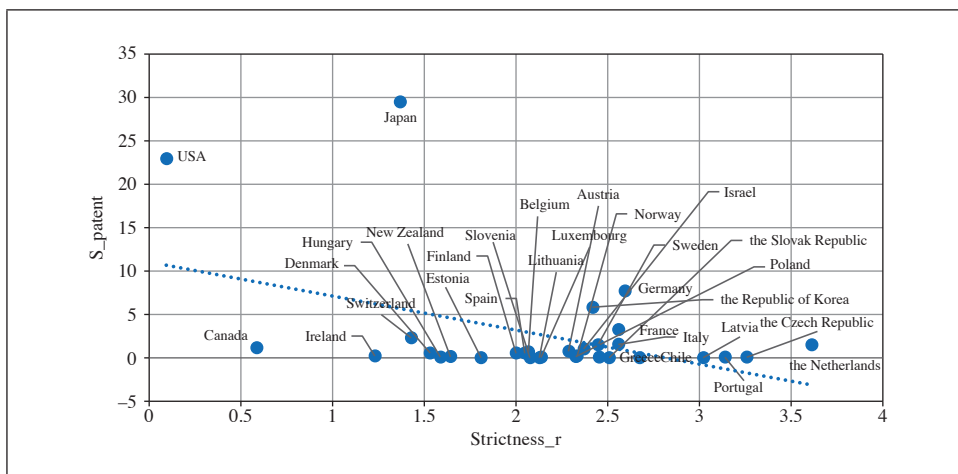


Fig. 2. Correlations between S_patent and Strictness_r (-0.44*)

Notes: the same as for Figure 1.

Source: the author's calculations, based on OECD.Stat (2023a, 2023b, 2023c), OECD (2024e).

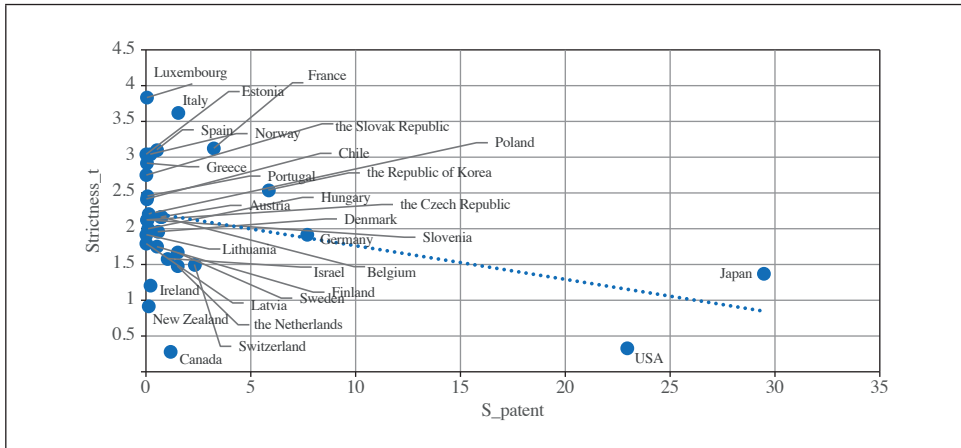


Fig. 3. Correlations between Strictness_t and S_patent (-0.37*)

Notes: the same as for Figure 1.

Source: the author's calculations, based on OECD.Stat (2023a, 2023b, 2023c), OECD (2024e).

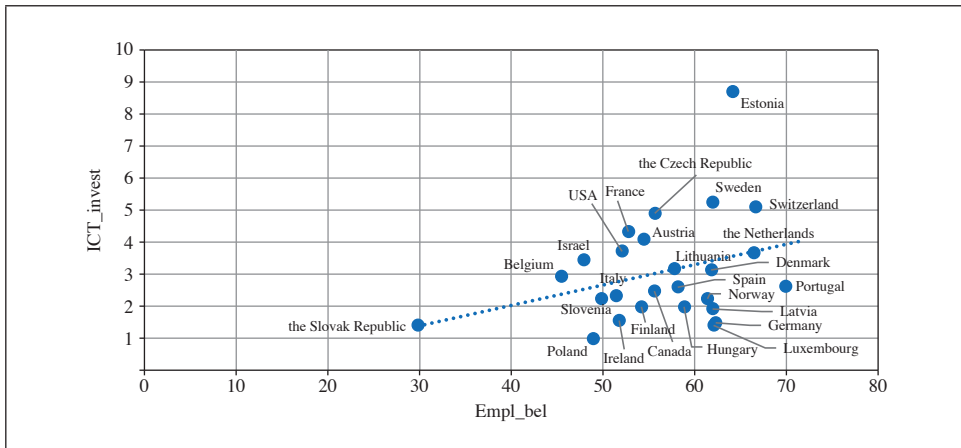


Fig. 4. Correlations between ICT_invest and Empl_bel (0.39*)

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The values of correlation and their significance were shown in parentheses. The figure shows the results for 28 OECD countries in 2021 (due to insufficient data the following countries were excluded: Chile, Greece, New Zealand, the Republic of Korea, the United Kingdom). Due to limitations in the size of the article, the figure is limited to presenting relatively strong correlations, i.e. > 0.31. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author's calculations, based on OECD.Stat (2023a, 2023b, 2023c), OECD (2024e).

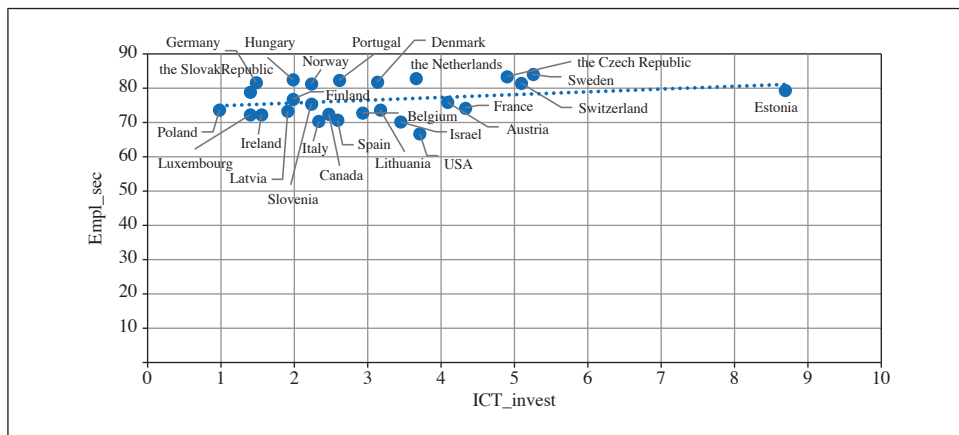


Fig. 5. Correlations between Empl_sec and ICT_invest (0.47*)

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The values of correlation and their significance were shown in parentheses. The figure shows the results for 28 OECD countries in 2021 (due to insufficient data the following countries were excluded: Australia, Chile, Colombia, Costa Rica, Iceland, Mexico, Turkey, Greece, New Zealand, the Republic of Korea, the United Kingdom). Due to limitations in the size of the article, the figure is limited to presenting relatively strong correlations, i.e. > 0.31. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author’s calculations, based on OECD (2024c, 2024e).

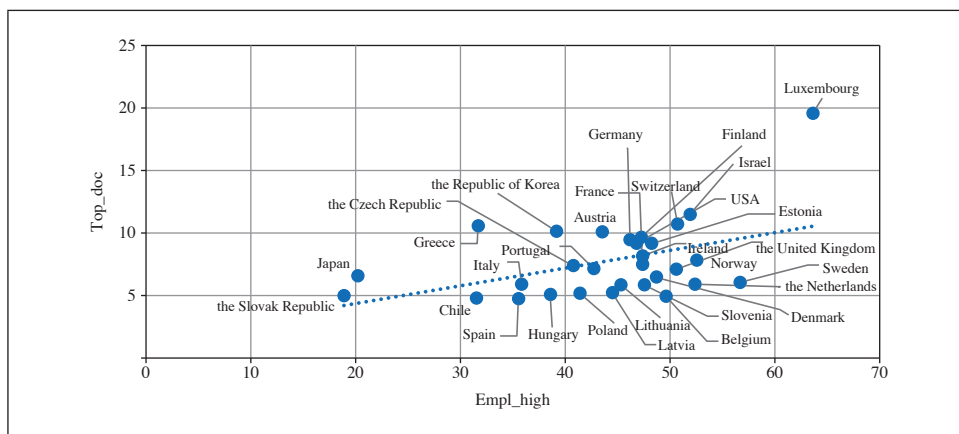


Fig. 6. Correlations between Top_doc and Empl_high (0.32*)

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The values of correlation and their significance were shown in parentheses. The figure presents the results for 31 OECD countries in 2021 (due to insufficient data the following countries were excluded: Australia, Canada, Colombia, Costa Rica, Iceland, Mexico, Turkey, New Zealand). Due to limitations in the size of the article, the figure is limited to presenting relatively strong correlations, i.e. > 0.31. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author’s calculations, based on OECD (2024c, 2024e).

Additionally, the results regarding employment by education level and employment in differently skilled occupations suggest that the work performed is not always related to one's education (especially higher education). This also means that individuals often work in jobs that are inconsistent with their education or even below their qualifications.

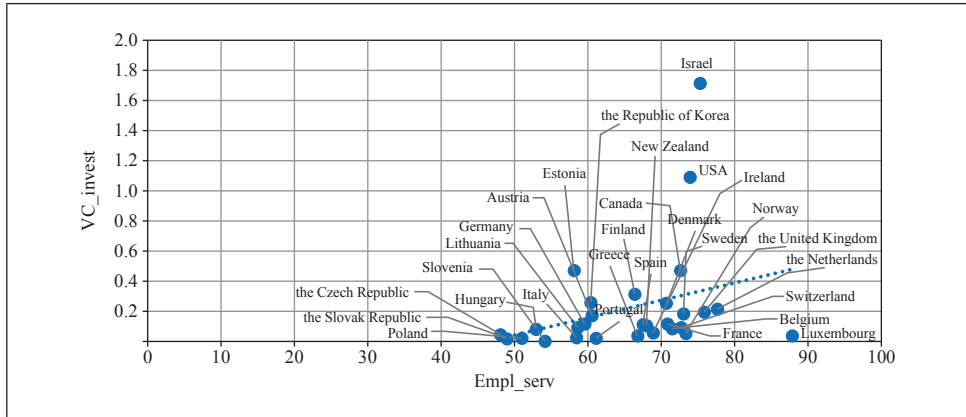


Fig. 7. Correlations between VC_invest and Empl_serv (0.30*)

Notes: ***, **, * means statistically significant at 1%, 5%, 10%, respectively. The values of correlation and their significance were shown in parentheses. The figure presents the results for 30 OECD countries in 2021 (due to insufficient data the following countries were excluded: Australia, Chile, Colombia, Costa Rica, Iceland, Japan, Latvia, Mexico, Turkey). Due to limitations in the size of the article, the figure is limited to presenting relatively strong correlations, i.e. $> |0.3|$. The correlation analysis is based on cross-sectional data from 2021 for OECD countries.

Source: the author's calculations, based on OECD (2024c, 2024e).

The results also indicate that the relationship between indicators measuring innovation and employment can vary across different sectors, which supports the fifth hypothesis. In particular, indicators measuring innovation tend to show a positive relationship with employment in services (Fig. 7), while they might have a negative relationship with employment in other sectors. The positive relationship between innovations and employment in services might result from several factors, such as developing new business models, improving service delivery and relationships with customers and clients, developing new service-oriented activities (e.g. data analysis, IT support), or services within digital government. In contrast, the negative relationship between indicators measuring innovation and employment in other sectors can result from the fact that innovations in industry and manufacturing sectors are mostly based on automation and robotisation, which can replace human workers with robots (OECD, 2016). Moreover, new technologies and innovations usually result in greater productivity, which may lead to lower demand

for employees. Finally, even though overall employment in a given sector may be reduced, the demand for highly skilled workers will probably increase in the digital economy. To sum up, the negative relationships between innovations and employment in sectors other than services often result from replacing the labour force with machines and robots to achieve greater productivity, which is consistent with the study by Acemoglu and Restrepo (2020).

5. Conclusion and Discussion

In conclusion, the empirical analysis indicates that investments in ICT in the OECD countries are positively associated with public spending on labour market policies. First of all, investments in ICT can enhance the effectiveness of public spending on labour market policies, improve job matching and the organisation of online training, and create new jobs in the digital economy. Moreover, greater involvement of employees in technology-driven processes and their better-informed contributions to R&D initiatives might result in an increase in R&D spending. Considering that investment in labour market policies contributes to the development of employees' human capital, this expanded human capital may also encourage educational institutions to increase their efforts in the field of R&D. However, a negative relationship was observed between public spending on LMP and the share of start-up firms in the business population, as well as the share of countries in "triadic" patent families. This may be due to the fact that start-ups in the ICT sector often rely more on private financing and venture capital, which is consistent with the implications of international organisations working on this phenomenon (OECD, 2024i).

The empirical analysis also indicates that a higher level of unionisation in the OECD countries is positively correlated with business R&D expenditure in information industries. Thus, it can be supposed that in the era of new technologies, trade unions may intensify their efforts to ensure that employees have access to training programmes to keep up with technological advancements. Consequently, in the new digital labour market, trade unions may be more involved in negotiations related to new technologies and innovation, ensuring that the adopted changes are beneficial for employees (e.g. Pilc *et al.*, 2022). However, the impact of innovation and new technologies on the labour market is considered complex, and as a result, outcomes might also vary depending on factors such as e.g. collective bargaining in wage determination (Corrocher *et al.*, 2023).

Furthermore, stricter employment protection legislation is usually associated with lower values in indicators measuring innovation in the OECD countries. However, in the case of start-up firms, the results show that strict employment protection may create an environment supportive of new business activities in some instances. This needs further research, but it may suggest that strict employment

protection encourages employers to start businesses because they feel more secure in a changing labour market. The results also indicate that the relationship between indicators measuring innovation and employment can vary across different sectors. In particular, indicators measuring innovation tend to show a positive relationship with employment in services, while they often have a negative relationship with employment in other sectors due to the replacement of the labour force with machines and robots to achieve greater productivity, which is consistent with the study by Acemoglu and Restrepo (2020).

Additionally, the results indicate a positive relationship between people employed in high-skill occupations and indicators measuring innovation. In contrast, the relationship between people employed in low and medium-skill occupations and indicators measuring innovation was negative. This implies that high-skilled employees usually benefit from technological changes because their skills can be used or transformed into other jobs. On the other hand, low-skilled employees usually need to reskill because their jobs are more likely to be automated, and routine tasks are more susceptible to being replaced by robots or automation. These results are consistent with previous studies (e.g. Frey & Osborne, 2017; Schroeder, Greef & Schreiter, 2017; Agolla, 2018), which indicate that professions involving repetitive, routine tasks are most at risk of automation, while occupations requiring high skill are least at risk from automation and robotisation.

One of the limitations of this analysis is the fact that the research is limited by the countries covered and the timeframe applied. Secondly, the study established important relationships between labour market characteristics and innovation based on the correlation analysis, which, however, does not provide a causal link between variables. Additionally, correlation analyses may not fully capture the contextual factors (e.g. economic) that might have an impact on the relationship between labour market institutions and innovation. As part of future research, it is worth analysing the causal link between labour market characteristics, with particular emphasis on the role of labour market institutions and innovation in the digital economy.

Conflict of Interest

The author declares no conflict of interest.

References

- Acemoglu, D., & Restrepo, P. (2020). Robots and Jobs: Evidence from US Labor Markets. *Journal of Political Economy*, 128(6), 2188–2244. <https://doi.org/10.1086/705716>
- Agolla, J. E. (2018). Human Capital in the Smart Manufacturing and Industry 4.0 Revolution. In: A. Petrillo, R. Cioffi, F. De Felice (Eds), *Digital Transformation in Smart Manufacturing* (pp. 41–58). IntechOpen. <https://doi.org/10.5772/intechopen.73575>

- Arntz, M., Gregory, T., & Zierahn, U. (2016). *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis* (OECD Social, Employment and Migration Working Papers No. 189). OECD Publishing. <https://doi.org/10.1787/5jlz9h56dvq7-en>
- Braesemann, F., Stephany, F., Teutloff, O., Kässi, O., Graham, M., & Lehdonvirta, V. (2022). The Global Polarisation of Remote Work. *PLoS ONE*, *17*(10), e0274630. <https://doi.org/10.1371/journal.pone.0274630>
- Bukht, R., & Heeks, R. (2017). *Defining, Conceptualising and Measuring the Digital Economy* (Development Informatics Working Paper No. 68). Centre for Development Informatics Global Development Institute, SEED. <https://doi.org/10.2139/ssrn.3431732>
- Corrocher, N., Moschella, D., Staccioli, J., & Vivarelli, M. (2023). *Innovation and the Labor Market: Theory, Evidence and Challenges* (GLO Discussion Paper No. 1284). Global Labor Organization (GLO).
- Costa Dias, M., Joyce, R., Postel-Vinay, F., & Xu, X. (2020). The Challenges for Labour Market Policy during the COVID-19 Pandemic. *Fiscal Studies*, *41*(2), 371–382. <https://doi.org/10.1111/1475-5890.12233>
- European Commission. (2022a). *Digital Economy and Society Index (DESI) 2022*. Methodological Note. Retrieved from: <https://digital-strategy.ec.europa.eu/en/policies/desi> (accessed: 30.04.2024).
- European Commission. (2022b). *Digital Economy and Society Index (until 2022)*. Retrieved from: https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi-2022/indicators#desi_subdim (accessed: 30.04.2024).
- Frey, C. D., & Osborne, M. A. (2017). The Future of Employment: How Susceptible Are Jobs to Computerisation? *Technological Forecasting and Social Change*, *114*, 254–280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- ILOSTAT. (2024). *ILOSTAT Data Explorer. Employment by Sex, Age and Occupation (Thousands) – Annual*. Retrieved from: https://rshiny.ilo.org/dataexplorer26/?lang=en&id=EMP_TEMP_SEX_AGE_OCU_NB_A (accessed: 2.05.2024).
- IMF. (2018). *Measuring the Digital Economy*. International Monetary Fund. Retrieved from: <https://www.imf.org/en/%20Publications/Policy-Papers/Issues/2018/04/03/022818-measuring-the-digital-economy> (accessed: 30.04.2024).
- Kryńska, E. (2004). Niedopasowania podaży i popytu na pracę w Polsce. In: E. Kryńska (Ed.), *Polski rynek pracy – niedopasowania strukturalne* (pp. 13–40). Instytut Pracy i Spraw Socjalnych.
- OECD. (2016). *Innovation and the Digital Economy*. In: *OECD Science, Technology and Innovation Outlook 2016*. OECD Publishing. https://doi.org/10.1787/sti_in_outlook-2016-30-en
- OECD. (2018). *Toolkit for Measuring Digital Economy*. OECD Publishing.
- OECD. (2019). *Going Digital: Shaping Policies, Improving Lives*. OECD Publishing. <https://doi.org/10.1787/9789264312012-en>
- OECD. (2020). *A Roadmap toward a Common Framework for Measuring the Digital Economy. Report for the G20 Digital Economy Taks Force*. OECD Publishing.

OECD. (2022). *OECD Main Science and Technology Indicators. R&D Highlights in the March 2022 Publication*. OECD Directorate for Science, Technology and Innovation. Retrieved from: <http://www.oecd.org/sti/msti2022.pdf> (accessed: 24.08.2023).

OECD. (2023). *Public Spending on Labour Markets*. <https://doi.org/10.1787/911b8753-en>

OECD. (2024a). *Business R&D Expenditure in Information Industries as a Share of GDP*. Retrieved from: <https://goingdigital.oecd.org/en/indicator/31> (accessed: 2.05.2024).

OECD. (2024b). *Employment by Activity*. <https://doi.org/10.1787/a258bb52-en>

OECD. (2024c). *Employment by Education Level*. <https://doi.org/10.1787/26f676c7-en>

OECD. (2024d). *Going Digital Toolkit*. Retrieved from: <https://goingdigital.oecd.org/> (accessed: 2.05.2024).

OECD. (2024e). *ICT Investment as a Share of GDP*. Retrieved from: <https://goingdigital.oecd.org/indicator/30> (accessed: 2.05.2024).

OECD. (2024f). *Patents in ICT Technologies, as a Share of Total IP5 Patent Families*. Retrieved from: <https://goingdigital.oecd.org/indicator/33> (accessed: 2.05.2024).

OECD. (2024g). *Start-up Firms (up to 2 Years Old) in Information Industries as a Share of All Businesses*. Retrieved from: <https://goingdigital.oecd.org/indicator/34> (accessed: 6.05.2024).

OECD. (2024h). *Top 10% Most-cited Documents in Computer Science, as a Share of the Top 10% Ranked Documents in All Fields*. Retrieved from: <https://goingdigital.oecd.org/indicator/32> (accessed: 6.05.2024).

OECD. (2024i). *Venture Capital Investment in the ICT Sector as a Share of GDP*. Retrieved from: <https://goingdigital.oecd.org/indicator/35> (accessed: 6.05.2024).

OECD.Stat. (2023a). *Main Science and Technology Indicators*. Retrieved from: <https://stats.oecd.org/Index.aspx?QueryId=33210> (accessed: 24.08.2023).

OECD.Stat. (2023b). *Strictness of Employment Protection – Individual and Collective Dismissals (Regular Contracts)*. Retrieved from: https://stats.oecd.org/Index.aspx?DataSetCode=EPL_OV (accessed: 24.08.2023).

OECD.Stat. (2023c). *Strictness of Employment Protection – Temporary Contracts*. Retrieved from: https://stats.oecd.org/viewhtml.aspx?datasetcode=EPL_T&lang=en (accessed: 24.08.2023).

OECD.Stat. (2023d). *Trade Union Density*. Retrieved from: <https://stats.oecd.org/Index.aspx?DataSetCode=TUD> (accessed: 24.08.2023).

Pilc, M., Woźniak-Jęchorek, B., Woźniak, K., & Piątek, D. (2022). Industry 4.0 in the Messages Published by Employers and Trade Unions in France, Germany, Poland, and the UK. In: M. Ratajczak-Mrozek, P. Marszałek (Eds), *Digitalization and Firm Performance: Examining the Strategic Impact* (pp. 157–188). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-83360-2_7

Rojko, A. (2017). Industry 4.0 Concept: Background and Overview. *International Journal of Interactive Mobile Technologies*, 11(5), 77–90. <https://doi.org/10.3991/ijim.v11i5.7072>

Rotar, L. J. (2022). Effectiveness of Active Labour Market Policies in the EU Countries for the Young Unemployed People and Implications for the Post-pandemic Period. *Engineering Economics*, 33(3), 326–337. <https://doi.org/10.5755/j01.ee.33.3.29652>

Schroeder, W., Greef, S., & Schreiter, B. (2017). *Shaping Digitalisation. Industry 4.0 – Work 4.0 – Regulation of the Platform Economy*. Friedrich-Ebert-Stiftung.

Schwab, K. (2015). The Fourth Industrial Revolution. *Foreign Affairs*. Retrieved from: <https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution> (accessed: 6.05.2024).

UNCTAD. (2024). *UN Trade and Development. Statistics. Empowering Development through Data. Data Centre. Digital Economy*. Retrieved from: <https://unctadstat.unctad.org/datacentre/> (accessed: 6.05.2024).

Wojtkowiak, G. (2023). The Development of the Effectiveness of Remote Work as Perceived by Employees and Managers, *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 2(1000), 71–85. <https://doi.org/10.15678/ZNUEK.2023.1000.0204>

KREM, 2025, 1(1007): 29–48
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18621>

Trust in Government as a Factor Influencing Acceptance of Behavioural Public Policy Instruments: Example of Poland and Selected Countries

Danuta Miłaszewicz

University of Szczecin, Faculty of Economics, Finance and Management, Department of Economics, Mickiewicza 64/66, 71-101 Szczecin, Poland, e-mail: danuta.milaszewicz@usz.edu.pl,
ORCID: <https://orcid.org/0000-0001-6429-7331>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Miłaszewicz, D. (2025). Trust in Government as a Factor Influencing Acceptance of Behavioural Public Policy Instruments: Example of Poland and Selected Countries. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 29–48. <https://doi.org/10.15678/krem.18621>

ABSTRACT

Objective: To assess public support of selected nations with regard to various types of nudges introduced by behavioural public policy and the level of trust these nations have in their governments as the creators of these policies.

Research Design & Methods: The article is based on literature studies, descriptive and comparative analysis along with statistical analysis of quantitative data derived from nudge acceptance surveys conducted (representative research samples, with the same methodology and questionnaire) in Poland and other countries analysed, as well as from the World Values Survey studies carried out in these countries.

Findings: In the countries analysed, citizens approve of most of the nudges presented to them. There is much greater variation in these countries in terms of trust in the government. The analysis of the relationships between both variables indicates that there is no simple linear relationship, i.e. there is neither an unambiguously positive nor negative relationship between the analysed

variables. It is rather a U-shaped relationship. The division of the surveyed countries into four groups is also visible.

Implications/Recommendations: The lack of trust in the government proven in the analysis may, in certain countries, be a factor that inhibits the acceptance of the tools introduced by the government and prevents or delays desired behavioural changes. In such a situation, an appropriate solution might be to create a behavioural team that could operate independently of the government and bring together experts who, with greater knowledge, would make better decisions regarding behavioural changes in societies. Governments can also use behavioural science to build trust among the public.

Contribution: Enhancing knowledge of the potential use of behavioural public policy instruments and attempting to assess and benchmark trust in government and acceptance of these instruments in selected countries. The conclusions from the conducted research can be used by both practitioners and theoreticians in the field of public policy.

Article type: original article.

Keywords: behavioural insights, behavioural public policy instruments, trust in government, comparative studies of countries.

JEL Classification: D78, D91, O57.

1. Introduction

Recent trends in shaping public policy are based on the increased contribution of behavioural sciences towards presenting a picture of complex human behaviour being influenced by a variety of factors such as desires and needs, social norms and values, infrastructural and institutional context, as well as the economic and political climate (Benartzi *et al.*, 2017). These findings of the behavioural sciences focusing on the behaviour of real people and their decision-making, constitute elements of behavioural knowledge that should be implemented in public policy, its design, implementation, and the evaluation of its instruments (Mont, Lehner & Heiskanen, 2014, p. 9; Ewert, 2020, p. 340). This knowledge contributes to the formulation of behavioural insights (BI) relating to an evidence-based understanding of behavioural determinants, and how behaviour can be adjusted (Dewies *et al.*, 2022). BI is a tool based on the assumption that context and behavioural biases influence decision-making, representing additional sources of market inefficiencies. Governments need to intervene in order to correct these biases and, as people are the most fundamental target group of policymaking, the use of BI is essential for the design of effective public policies (Sevgin, 2020).

Public policy using BI, referred to as behavioural public policy (BPP), includes all measures and modes of public policy aimed at influencing human behaviour with insights from behavioural science (Straßheim, 2020, p. 116). It offers decision-

-makers clear choices as to which instrument or course of action can lead to better outcomes improving individual and social well-being (John, 2016, p. 129; 2023). It is intended to bring about small changes (costs) and significant improvements (benefits) (Sevgin, 2020). The behavioural interventions implemented are the type of interventions that comprise, for example, providing information, appealing to values and norms, reinforcing commitment and restructuring choice options, i.e. using so-called nudges (Stern, 2020). Nudges have been widely adopted by governments of different ideological beliefs (Halpern & Sanders, 2016; OECD, 2017a). They are now considered the most visible sub-type of BPP (Straßheim, 2020, p. 116) and the most popular type of policy intervention suggested by behaviourists (Lades & Nova, 2022).

In public policy research, widespread acceptance of policies has been identified as a key determinant for their success (John, Martin & Mikołajczak, 2023). In recent years, public opinion has become even more important for policy success due to the decline in political trust, among other factors (Torcal & Christmann, 2021; OECD, 2022). Political trust is the confidence of citizens in a government or political system (Miller, 1974). Two subcategories of trust can be distinguished: systemic trust and institutional trust, which are two important dimensions for measuring political trust (Tang & Huhe, 2014). Institutional trust, being citizens' trust in public institutions, is essential to the functioning of many governance processes enabling public bodies to plan and implement policies, and deliver services (OECD, 2017b; UNDP, 2021).

On the one hand, it is recognised that the application of BI to public policy can help restore people's trust in the ability of governments to solve new and old problems, making governments more effective and citizen-focused (OECD, 2015, p. 9). On the other hand, there is a theoretical link between trust in public institutions and support for nudges. People who have more trust in government would be more likely to accept nudges proposed by the government (Sunstein, Reisch & Kaiser, 2019, p. 1423).

Assessing public support in selected nations with regard to various types of nudges introduced by public policy and the level of trust these nations have in their governments as policy makers becomes, therefore, an important research field in the evaluation of BPP. The main objective of the study is to try to answer the question of whether higher levels of trust in government in economies are associated with greater acceptance of nudges therein? The article uses literature studies, descriptive and comparative analysis along with statistical analysis of quantitative data derived from nudges acceptance surveys conducted in the analysed countries as well as from the World Values Survey studies carried out in these countries.

The study is divided into four main sections. The section following the introduction reviews the literature on nudges as an instrument of the BPP and trust in the government. The third section describes the research methodology and data used

in the analysis, and the fourth section presents the results of the analysis of nudge acceptance and trust in government in 17 countries. The article concludes with a section presenting the main insights from the analysis and a discussion.

2. Literature Review

2.1. Nudge and Nudging

Nudge is the most popularised SB application that has emerged under the auspices of libertarian paternalism (Kuehnhanss, 2019) referred to as the “third way” (Thaler & Sunstein, 2008, p. 252) or the “middle way” (Schlag, 2010, p. 914) between traditional paternalism and libertarianism. This is a political approach that preserves freedom of choice (i.e. libertarianism), but encourages the public sector to steer people in directions that will promote their own welfare (i.e. paternalism) (Mont, Lehner & Heiskanen, 2014, p. 19). By developing interventions rooted in behavioural insights and grounded in libertarian paternalism, Thaler and Sunstein created a new behavioural programme called the “behavioural paradigm” or the “nudge paradigm” (Lehner, Mont & Heiskanen, 2016).

The literature offers numerous definitions of nudge, although these do not fully reflect its essence. The term should be understood as “(...) interventions that steer people in certain directions, but at the same time allow them to go their own way” (Sunstein & Reisch, 2019). The creators of the nudge concept offer a following explanation (Thaler & Sunstein, 2008, p. 6): “Any aspect of choice architecture that alters people’s behaviour in a predictable way without excluding any options or significantly altering their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid.”

According to these authors, the decision-making environment can be created and changed accordingly by influencing the conditions of decisions, and the formulation of an interpretive framework for individual decisions has a great impact on the outcome. The activity of organising the context in which a decision is made has been referred to as choice architecture, and the manipulation of choice as nudging (Thaler & Sunstein, 2008, pp. 3, 236). Hence, nudge is an intervention made by changing the presentation of choices that alters people’s behaviour in predictable ways. It is any intervention in the structure of a decision context. Replacing one decision context with another is justified, if there is evidence that one option is actually better than the other, and the new context leads to the better option being chosen more frequently. At the same time, nudges preserve freedom of choice because they do not forbid any options nor change economic incentives.

Changing the context of decision-making may, in some cases, counteract errors made by people in the decision-making process without significant negative side

effects. Public decision-makers using nudging can predictably modify citizens' behaviour by manipulating their choice environment (Hortal, 2023).

While behavioural interventions are addressed to individuals, they very often focus on a social goal. Research on choice architecture has shown that in many cases it is possible to protect freedom of choice and promote social goals by structuring the decision-making environment in such a way that the expressed interests of individuals are more closely linked to social goals (Sunstein, 2013). These so-called social nudges (Nagatsu, 2015) are interventions based on insights from social psychology and sociology (Brandon *et al.*, 2019). They reveal important information about other people's behaviour, raise normative expectations about what is desirable, can be shared and communicated online or offline, and use social incentives and sanctions to regulate individual and group behaviour (van der Linden, 2018).

The policy field often referred to as nudging is considered to be the idea that small, inexpensive changes, tailored to the human mind, can significantly improve public policy, relying heavily on encouraging citizens to do things they would agree to after reasonable consideration (John, 2018). Architects of choice (e.g., policy-makers) indirectly engage in signalling social norms that can be accepted or rejected by individuals (Tankard & Paluck, 2016). Individuals who reject the norm show a boomerang effect, caused, for example, by the fact that the architect of choice is perceived as an opponent of the individuals' own (political) ideology (Costa & Kahn, 2013) and is not trusted (Schubert, 2017). Different types of public interventions may, therefore, not be supported by citizens and can be counterproductive (John, 2018).

2.2. Political and Institutional Trust

Trust is the subject of numerous studies by philosophers, social psychologists, sociologists, political scientists and economists. There is no consensus in the literature on the definition of trust, so there are various explanations of this phenomenon using relational and situational elements and combinations thereof. The issue is of a complex nature; trust is both something we do and an attitude we can have and adopt (Faulkner, 2018).

Trust is the basis of all human contact and institutional interactions and can be defined as the willingness of one party to rely on the other party to honour commitments (Blind, 2007, p. 3). Trust is also explained as an individual's assessment that another person, whether acting as an individual, as a member of a group, or in an institutional role, has the motivation and competence to act in the interests of the individual and will do so without supervision and monitoring (Warren, 2018, p. 75). Trust is also defined as the belief that people (companies, institutions) will not: 1) make promises they know they cannot keep, 2) deviate from promises they can

keep, 3) violate norms in order to exploit people who follow them (Keefer *et al.*, 2020, p. 42).

Emphasising the attitudes of subjects or relational and situational elements in the definition of trust means that many potential dimensions of trust can be distinguished, which certainly interact with each other. Two broad categories of trust can be observed in the literature: particularised and generalised trust. Particularised trust refers to trust in a known individual, whereas generalised trust refers to trust in persons (or systems) not known personally (Bjørnskov, 2007).

One of the main subcategories of particularised trust is a political trust (Melios, 2020, p. 3). It includes broad trust in government or trust in democracy, as well as trust in more specific institutions and groups, such as the civil service, parliament and individual elected officials (Norris, 2017, p. 24). It consists of the two elements of systemic trust and institutional trust. Systemic trust refers to trust in the state regime and system (e.g. democracy and its institutions), while institutional trust refers to general trust in public institutions (Xiaoxiao & Zhou, 2022).

Institutional trust concerns formal rules introduced and enforced by the state (Bentkowska, 2023). Institutional trust is a product of assessments based on economic or procedural performance. It is higher when political actors and institutions achieve high levels of procedural and policy performance (Hakhverdian & Quinton, 2012; van der Meer & Hakhverdian, 2017). However, the literature also highlights that institutional trust is based on the concept of generalised trust passed down through the socialisation process from one generation to the next according to social and cultural norms (Lahno, 2001; Kaasa & Andriani, 2022). Therefore, a lack of trust in authority may be the result of certain cultural characteristics related to widespread distrust (low generalised trust), but also the poor performance observed in everyday life (Bentkowska, 2023).

Institutional trust is the degree to which individuals accept and perceive institutions as benevolent, competent, trustworthy and accountable to citizens (Devos, Spini & Schwartz, 2002). These can be explained by subjective perceptions of the public or by objective indicators of government competence, fairness and impartiality (Norris, 2022, p. 34). Holding a position of a trustworthy government requires the policies developed by officials to reflect the values and interests of diverse and pluralistic populations (Levi, 2022, p. 216). Citizens' lack of trust in government distorts their policy preferences, reducing support for public policies, and these policies may become less effective (Keefer *et al.*, 2020, p. 47). Trust in institutions is essential for functioning of a democratic government and society (Faulkner, 2018). It influences citizens' overall sense of safety and confidence, their sense of predictability and awareness of protection against existing risks, and their tendency towards pro-social attitudes (Sobiech, 2017; Faulkner, 2018).

The level of institutional trust of individuals may determine the evaluation and acceptance of public policies and their tools. If there is a lack of public support for a policy over a long period of time, a short-term success – based on its legality or even nudging – is less likely (John, 2011, p. 22).

3. Methodology and Data

The extent to which citizens accept behavioural public policy instruments in the form of nudges has so far been studied in various countries and has examined different individual nudges or sets of them (e.g. default options, green nudges, reminders, providing information). For the further analysis presented in this article, the results of surveys conducted by various authors in 18 countries have been selected (Reisch & Sunstein, 2016, Sunstein, Reisch & Rauber, 2018; Khadzhyradieva, Hrechko & Savkov, 2019; Sunstein & Reisch, 2019; Sunstein, Reisch & Kaiser, 2019; Miłaszewicz, 2023; Almqvist & Andersson, 2024). These countries are listed in Table 1. Some of these surveys were conducted in selected groups of countries (e.g. from Europe, the Americas or Asia), others in individual countries (e.g. Australia, Sweden, Ukraine and Poland). These countries were not selected according to any particular key for the original research. According to their authors, although the list of these countries is not complete, it includes a significant subset of the world's nations (Sunstein & Reisch, 2019). From the point of view of the analysis carried out in this article, it is important to note that in each of the 18 countries the survey research was conducted based on the same methodology and questionnaire.¹ It consisted of 49 questions designed to: obtain a broad characterisation of the research sample (15 questions), get respondents' assessment of health and life satisfaction (9 questions), their confidence, risks and concerns (10 questions) and attitudes towards the selected nudges as instruments of choice architecture (15 questions²). The formulation of the nudges selected for the study is presented in Table A.1 attached in the Appendix.

The same questionnaire was translated into different national languages. Some questions (e.g. on support for political parties, income level) were adapted to national conditions. In all countries, the survey questionnaires were close-ended and the order of nudges presented was randomised. In the countries analysed, surveys of support for hypothetical nudges were conducted between 2015 and 2020 and used

¹ An English-language version of the questionnaire was made available in the article by Sunstein, Reisch and Rauber (2018).

² With the exception of Sweden as subliminal advertising is prohibited and one of the original instruments (requirement: one meat-free day per week in canteens in public institutions – the last in Appendix) was considered to be an order that did not meet the definition of a nudge. In order to standardise the surveys, only 13 nudges in all the countries analysed were included in the final analysis of support for nudges and trust in government.

large-size research samples, representative of those countries, which increases the validity of their results. In each country, this was a random-quota sample, where quotas were selected according to representation in the national population of people aged 18 and over for gender, age, region of residence and, in certain cases, education. In each country, the survey was conducted using computer-assisted web interviewing (CAWI). The survey questionnaires provided to respondents were close-ended and, as recommended in the literature, did not use the original word “nudges” or its translation into national languages (de Quintana Medina, 2020, pp. 111–112). Respondents were only asked to declare their approval (acceptance) or disapproval (non-acceptance) of the same hypothetical nudges, without measuring the intensity of approval or disapproval on any scale. The percentage of respondents approving of a given BPP instrument was taken as an indicator of its approval (acceptance) in a given country. The first variable in the analysis carried out in the next section of the study was, therefore, the respondents’ answers to the questions on acceptance of the selected nudges.

The second variable adopted in the analysis is the level of institutional trust in the countries surveyed. The questionnaires of the surveys on the acceptance of nudges specified that they are proposed by the government. Therefore, the level of trust in government identified in the World Values Survey (WVS) reports is presented as institutional trust. The source of the trust data was the report of the 7th wave of the WVS survey conducted between 2017 and 2020, containing data for 64 countries/territories. Under the current rules, each country is surveyed once per wave and the survey requires full and faithful implementation of a common questionnaire across all countries covered in one wave. In each country, the WVS questionnaire should be translated into all languages that are the first language for 15% (or more) of the population. In all countries random samples representative of the adult population were used, i.e. all persons aged 18 years and older living in private households in each country, regardless of their nationality, citizenship or language. The vast majority of surveys were conducted on a face-to-face interview basis using the following data collection methods: paper and pencil interview (PAPI) and computer-assisted personal interview (CAPI) (Haerpfer *et al.*, 2022). For the analysis conducted in this study, the positive responses to the question: Can you say how much trust you have in the government? (“a great deal” and “quite a lot”) were summed up and it was determined what proportion of respondents (in percentage terms) trust those in power in a given society. The results of this sum for the countries analysed were implemented as the second research variable.

These countries represent various geographical regions, different socio-economic systems, traditions, political regimes and cultural clusters discussed in the literature (Mensah & Chen, 2013). According to the Democracy Index, for most of them their systems reflect a chosen form of democracy in which the voice of citizens should

matter. Among the countries analysed here, only Ukraine and Mexico are categorised as hybrid countries, and China and Russia as authoritarian regimes (Economist Intelligence, 2022). With such a diverse research sample, an international comparative analysis should provide interesting results.

The research samples were analysed using well-known statistical methods of descriptive analysis. The analysis of relationship between these variables was conducted based on the results of the statistical analysis obtained and the use of the graphical method. There was also an attempt to determine the relationship between the variables under study based on various forms of regression function. Nevertheless, the estimated models of the relationship between the studied variables either did not imply statistically significant parameters or explained the studied relationship to a small extent (showed mismatches between the models and the studied phenomenon).³

4. Research Results and Discussion

The instruments analysed, characterised by varying levels of depth of public intervention in people's lives, are somewhat diverse in nature, trigger various systems of thinking, address different individual and social problems, and may, therefore, be perceived and evaluated in different ways by individual respondents. After rejecting two nudges (no. 8 and no. 15 – see Table A.1 in the Appendix and footnote 2), the first results of the analysis proved that, on average across countries, around 11 (SD = 1.3844) of the 13 nudges were approved by a simple majority, ranging from 8 in Denmark to 13 in China and South Korea (see Table 1). This means that a large majority of citizens in various countries approve of most of the nudges presented to them.

When comparing the acceptance rates of nudges, these countries can be divided into three distinct categories (e.g. Reisch & Sunstein, 2016; Sunstein, Reisch & Rauber, 2018):

1) nations that support nudges – mostly industrialised western democracies, where the vast majority of citizens approve of nudges, at least if they are perceived to be in line with the interests and values of the majority of citizens and do not have illegal aims (Australia, Canada, France, Germany, Poland, Ukraine, USA, Italy and the UK),

2) nudge enthusiast nations – a small group of nations in which an overwhelming majority approve nearly all nudges (Brazil, China, South Korea, Russia and South Africa),

³ Due to editorial limitations of the size of the article, these regression models and their estimation results are not shown.

3) nations cautiously in favour of nudges – a group of nations that generally show average approval of most nudges, but also much lower approval rates (Denmark, Hungary, Japan, Sweden).

Table 1. Support for Nudges and Trust in Government in the Analysed Countries

Number	Country	Number of Nudges Accepted by Simple Majority Vote	Support for Nudges (%)	Trust in the Government (%)
1	Australia	11	73.4	30.3
2	Brazil	12	81.5	22.5
3	Canada	10	71.5	46.1
4	China	13	86.4	94.6
5	Denmark	9	55.2	39.1
6	France	11	68.7	30.7
7	Germany	9	64.4	38.6
8	Great Britain	11	71.3	33.4
9	Hungary	9	57.9	37.6
10	Italy	11	72.5	29.3
11	Japan	8	59.8	39.9
12	Poland	11	68.2	23.1
13	Russia	11	75.8	53.0
14	South Africa ^a	9	77.0	.
15	South Korea	13	78.2	51.3
16	Sweden	11	57.4	50.7
17	Ukraine	11	70.7	18.9
18	USA	11	60.5	23.8
Descriptive statistics	Min	8 (Japan)	55.2 (Denmark)	18.9 (Ukraine)
	Max	13 (China, South Korea)	86.4 (China)	94.6 (China)
	Range	5	31.2	75.7
	Mean	10.6	69.0	39.0
	Median	11.0	70.7	37.6
	Standard deviation	1.37	8.62	17.25
	Variable coefficient	12.98	12.49	44.24
	Skewness	-0.0532	0.1339	1.9662

^a Country excluded when calculating statistical measures due to lack of data on levels of trust in government.

Source: the author.

In each of the countries analysed, the average support for all nudges collectively is high, exceeding 55% (Table 1). However, it varies widely across the group of countries analysed. In China, which stands out as a nation demonstrating especially high enthusiasm for nudges, overall support for these instruments is particularly high, exceeding the lowest level of acceptance (in Denmark) by more than 31 percentage points (p.p.) and the average by more than 17 p.p. The variation in support for nudges among the surveyed nations is also evidenced by the large values of the standard deviation (the scatter of support scores around the average for all nations is more than 8.5 p.p.) and the coefficient of variation of 12.5% (the percentage of the standard deviation in the average level of support by the surveyed nations).

Noticeably more variation can be perceived, however, in terms of trust in the government. Here as well, China is in the lead, with almost 95% of citizens declaring very high or fairly high trust in their government. This is almost 76 p.p. higher than the minimum (in Ukraine) and 56 p.p. higher than the average in the analysed countries. There is also more than twice as much scatter in the level of trust in government in the surveyed countries around its average level (17.25 p.p.), accounting for more than 44% of its value (coefficient of variation). In addition, in as many as 11 countries it is lower than the average level of trust in government in the surveyed nations.

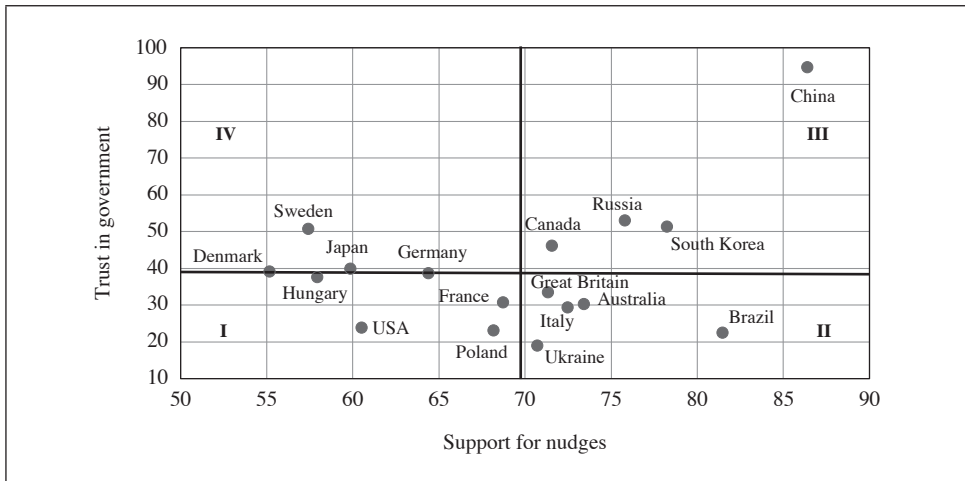


Fig. 1. Support for Nudges (Average in %) and Trust in Government (in %) in the Analysed Economies

Source: the author.

An analysis of the relationship between the two variables can be made on the basis of Figure 1. It clearly shows that we are not dealing with a simple linear rela-

tionship, i.e. there is neither an unambiguously positive nor negative relationship between the analysed variables in the studied countries. If the economies were divided into two groups, they would be almost the same size, and in the first one a negative relationship is discernible (Denmark, France, Japan, Germany, Poland, Ukraine, Hungary), while in the second group a positive one (Australia, China, Canada, South Korea, UK, Italy). However, Brazil would then have to be treated as an outlier, characterised by low trust in government and a very high level in the nudge support index.

In further analysis, however, average values were used and, due to them, it is possible to divide the analysed countries into four groups: with lower than average levels of acceptance of nudges and trust in the government (1st quarter: France, Poland, Hungary, USA); with lower than average levels of trust and higher than average levels of acceptance of nudges (2nd quarter: Australia, Brazil, Ukraine, UK, Italy); with higher than average levels of trust and acceptance of nudges (3rd quarter: China, Canada, South Korea, Russia); with higher than average levels of trust but lower than average levels of support for nudges (4th quarter: Denmark, Japan, Germany, Sweden).

There is a view in the literature that, compared to traditional interventions such as taxes and fines, citizens in general are more accepting of nudges and tend to welcome them in most countries if they promote goals that they themselves support and are implemented by parties with whom they can identify (Schmidt & Engelen, 2020). The results of the analysis obtained in this study therefore confirm that the level of acceptance of the presented public policy instruments is high. Respondents in the analysed countries overwhelmingly support nudges as long as they have legitimate social objectives and are in line with people's interests and values. The analysed hypothetical nudges relate to goals aimed at increasing social well-being (improving health, protecting the environment, helping the needy), and in most of the surveyed nations these BBP goals are accepted and supported by citizens. However, not all nudges directed at achieving these goals are supported to the same extent in the various nations.

The analysis proves that the theory formulated on the basis of previous studies stating that "people who have high trust in public institutions would be more willing to accept government nudging" (Sunstein, Reisch & Kaiser, 2019, p. 1423), and used to explain international differences in support for nudges (Sunstein, Reisch & Rauber, 2018), cannot be confirmed. According to this theory, one would expect a positive relationship between the level of acceptance of nudges and the level of trust in government, but as the analysis in this study shows, this is not the case. The group of nations identified as nudge enthusiasts includes Brazil, where citizens have little trust in government, while the group of nations cautiously in favour of nudges includes those where citizens have relatively high trust in government (Denmark, Japan,

Sweden). High trust in public institutions, therefore, does not necessarily imply greater support for nudging at the national level and does not explain international differences in acceptance of these BPP instruments. This observation would point to alternative explanations or a more complex relationship between the variables under study than suggested in the earlier literature.

5. Conclusion

Nudges represent a whole spectrum of public actions that, without limiting possible options, should improve choice. International research on them has shown that, in quite a number of cases, it is possible to structure the decision-making environment in such a way that the choices of individuals become more closely linked to social goals (Hertwig, 2017). The research presented in this paper fits into this broad research agenda by providing some insights and confirming (or not) the findings of studies conducted by other authors. It can also be helpful to public policy-makers and the architects of choice providing policy-makers, who are considering the use of nudges in their policy repertoire, with important information on the popularity of nudges.

Various insights emerge from the research conducted for this study. On the one hand, the goals promoted by the hypothetical nudges analysed are supported by the citizens of the countries studied. On the other hand, the lack of trust in the government shown in the analysis may, in some countries (e.g. Poland), be a factor inhibiting acceptance of the tools introduced by the government and inhibiting or delaying the desired behavioural changes suggested by the nudges (boomerang effect). It is known from previous research that support for nudges depends on the type of choice architect implementing the intervention and using these BPP tools (Tannenbaum, Fox & Rogers, 2017) as well as on the fact that people tend to be sceptical of government interventions while experts are seen as much more trustworthy than policy-makers (Evers *et al.*, 2018). In a situation of low trust in government, an appropriate solution could be the creation of some type of behavioural team that could operate independently of government, but should bring together experts who are more knowledgeable and would make better decisions on behavioural change in societies. Such solutions are suggested by the results of a study in Sweden (Almqvist & Andersson, 2024). The third observation is based on the finding that the best way to earn trust is to deserve it (Sunstein, Reisch & Kaiser, 2019). Governments can use behavioural knowledge to build trust among the public. Therefore, when applying nudging, they should be guided by the Nudging Bill of Rights, which does not suggest judicially enforceable rights, but is a set of obligations that policy-makers should follow (Sunstein & Reisch, 2019, pp. 131–134): public officials must promote a legitimate purpose; nudges must respect individual rights and must be in line with people's values and interests; nudging must not manipulate people; nudges should

not take something from people and give it to others without their explicit consent and should be transparent rather than hidden.

The research presented in this paper has its own specificities and limitations. The specificity of the research is reflected in the selection of the research sample and the variables adopted for the analysis. The inclusion of other countries in the analysis and other examples of nudges may affect the results obtained. The research should be replicated. Socio-economic conditions, which have clearly changed in the international arena since the time of the study, will certainly affect the results obtained.

Conflict of Interest

The author declares no conflict of interest.

Appendix

Table A.1. Hypothetical Nudges

Number	Description of the Instrument
1	The government requires a “traffic lights” system for food, in which healthy food would be sold with a small green label, unhealthy food with a small red label, and food that are neither especially healthy nor especially unhealthy with a small yellow label
2	The government requires calorie labels at chain restaurants (such as McDonald’s and Burger King)
3	The government encourages (without requiring) electricity providers to adopt a system in which consumers would be automatically enrolled in a “green” (environmentally friendly) energy supplier, but could opt out if they wished
4	A state law requiring people to say when they obtain their drivers’ license whether they want to be organ donors
5	A state law requires all large grocery stores to place their most healthy food in a prominent, visible location
6	To reduce deaths and injuries associated with distracted driving, the national government adopts a public education campaign, consisting of vivid and sometimes graphic stories and images, designed to discourage people from texting, emailing, or talking on their cell phones while driving
7	To reduce childhood obesity, the national government adopts a public education campaign, consisting of information that parents can use to make healthier choices for their children
8 ^a	The government requires movie theaters to provide subliminal advertisements (that is, advertisements that go by so quickly that people are not consciously aware of them) designed to discourage people from smoking and overeating
9	The government requires airlines to charge people, with their airline tickets, a specific amount to offset their carbon emissions (about 10€ per ticket); under the program, people can opt out of the payment if they explicitly say that they do not want to pay it

Table A.1 cont'd

Number	Description of the Instrument
10	The government requires labels on products that have unusually high levels of salt, as in, "This product has been found to contain unusually high levels of salt, which may be harmful to your health"
11	The government assumes, on tax returns, that people want to donate 50€ to the Red Cross (or to another good cause) subject to opt out if people explicitly say that they do not want to make that donation
12	The government requires movie theaters to run public education messages designed to discourage people from smoking and overeating
13	The government requires large electricity providers to adopt a system in which consumers would be automatically enrolled in a "green" (environmentally friendly) energy supplier, but could opt out if they wished
14	To halt the rising obesity problem, the government requires large supermarket chains to keep cashier areas free of sweets
15 ^a	For reasons of public health and climate protection, the government requires canteens in public institutions (schools, public administrations and similar) to have one meat-free day per week

^a Instrument not considered for further analysis.

Source: Sunstein, Reisch & Rauber (2017, p. 7).

References

- Almqvist, G., & Andersson, P. (2024). Low Support for Nudging among Swedes in a Population-representative Sample. *Behavioural Public Policy*, 8(2), 382–394. <https://doi.org/10.1017/bpp.2021.4>
- Benartzi, S., Beshears, J., Milkman, K. L., Sunstein, C. R., Thaler, R. H., Shankar, M., Tucker-Ray, W., Congdon, W. J., & Galing, S. (2017). Should Governments Invest More in Nudging? *Psychological Science*, 28(8), 1041–1055. <https://doi.org/10.1177/0956797617702501>
- Bentkowska, K. (2023). Trust and the Quality of Formal Institutions. *Ekonomia i Prawo. Economics and Law*, 22(1), 21–35. <https://doi.org/10.12775/EiP.2023.002>
- Bjørnskov, C. (2007). Determinants of Generalized Trust: A Cross-country Comparison. *Public Choice*, 130(1), 1–21. <https://doi.org/10.1007/s11127-006-9069-1>
- Blind, P. (2007). *Building Trust in Government in the Twenty-first Century: Review of Literature and Emerging Issues*. 7th Global Forum on Reinventing the Government. Building Trust in Government. 26–29 June 2007, Vienna, Austria. Retrieved from: <https://www.almendron.com/tribuna/wp-content/uploads/2016/11/building-trust-in-government-in-the-twenty-first-century.pdf> (accessed: 25.05.2023).
- Brandon, A., List, J. A., Metcalfe, R. D., Price, M. K., & Rundhammer, F. (2019). Testing for Crowd out in Social Nudges: Evidence from a Natural Field Experiment in the Market for Electricity. *Proceedings of the National Academy of Sciences USA*, 116(12), 5293–5298. <https://doi.org/10.1073/pnas.1802874115>

- Costa, D. L., & Kahn, M. E. (2013). Energy Conservation “Nudges” and Environmentalist Ideology: Evidence from a Randomized Residential Electricity Field Experiment. *Journal of the European Economic Association*, 11(3), 680–702. <https://doi.org/10.1111/jeea.12011>
- de Quintana Medina, J. (2020). *The Acceptability of Nudges as Public Policy Tools*. PhD thesis. Department of Sociology, Universitat Autònoma de Barcelona. Retrieved from: <https://www.tdx.cat/bitstream/handle/10803/671907/jdqm1de1.pdf?sequence=5.xml> (accessed: 24.05.2023).
- Devos, T., Spini, D., & Schwartz, S. H. (2002). Conflicts among Human Values and Trust in Institutions. *British Journal of Social Psychology*, 41(4), 481–494. <https://doi.org/10.1348/014466602321149849>
- Dewies, M., Denктаş, S., Giel, L., Noordzij, G., & Merkelbach, I. (2022). Applying Behavioural Insights to Public Policy: An Example from Rotterdam. *Global Implementation Research and Applications*, 2, 53–66. <https://doi.org/10.1007/s43477-022-00036-5>
- Economist Intelligence. (2022). *Democracy Index 2021: The China Challenge*. The Economist Intelligence Unit. Retrieved from: <https://www.eiu.com/n/campaigns/democracy-index-2021> (accessed: 10.06.2023).
- Evers, C., Marchiori, D. R., Junghans, A. F., Cremers, J., & De Ridder, D. T. D. (2018). Citizen Approval of Nudging Interventions Promoting Healthy Eating: The Role of Intrusiveness and Trustworthiness. *BMC Public Health*, 18, 1182. <https://doi.org/10.1186/s12889-018-6097-y>
- Ewert, B. (2020). Moving beyond the Obsession with Nudging Individual Behaviour: Towards a Broader Understanding of Behavioural Public Policy. *Public Policy and Administration*, 35(3), 337–360. <https://doi.org/10.1177/0952076719889090>
- Faulkner, P. (2018). Finding Trust in Government. *Journal of Social Philosophy*, 49(4), 626–644. <https://doi.org/10.1111/josp.12262>
- Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E., & Puranen, B. (Eds). (2022). *World Values Survey: Round Seven – Country-pooled Datafile Version 5.0*. JD Systems Institute & WVSA Secretariat. <https://doi.org/10.14281/18241.20>
- Hakhverdian, A., & Quinton, M. (2012). Institutional Trust, Education, and Corruption: A Micro-macro Interactive Approach. *Journal of Politics*, 74(3), 739–750. <https://doi.org/10.1017/S0022381612000412>
- Halpern, D., & Sanders, M. (2016). Nudging by Government: Progress, Impact and Lessons Learnt. *Behavioral Science & Policy*, 2(2), 53–65. Retrieved from: <https://behavioralpolicy.org/wp-content/uploads/2017/06/Sanders-web.pdf> (accessed: 10.06.2023).
- Hertwig, R. (2017). When to Consider Boosting: Some Rules for Policy-makers. *Behavioural Public Policy*, 1(2), 143–161. <https://doi.org/10.1017/bpp.2016.14>
- Hortal, A. (2023). Evidence-based Policies, Nudge Theory and Nancy Cartwright: A Search for Causal Principles. *Behavioural Public Policy*, 7(2), 333–352. <https://doi.org/10.1017/bpp.2020.55>

John, P. (2011). *Making Policy Work*. Routledge.

John, P. (2016). Behavioral Approaches: How Nudges Lead to More Intelligent Policy Design. In: G. B. Peters, P. Zittoun (Eds), *Contemporary Approaches to Public Policy. Theories, Controversies and Perspectives* (pp. 113–133). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-50494-4_7

John, P. (2018). *How Far to Nudge? Assessing Behavioral Public Policy*. Edward Elgar Publishing.

John, P. (2023). The Ethics of Self-aware Behavioural Public Policies: Any Different to Standard Nudges? *Behavioural Public Policy*, 7(4), 898–905. <https://doi.org/10.1017/bpp.2023.10>

John, P., Martin, A., & Mikołajczak, G. (2023). Support for Behavioral Nudges versus Alternative Policy Instruments and Their Perceived Fairness and Efficacy. *Regulation & Governance*, 17(2), 363–371. <https://doi.org/10.1111/rego.12460>

Kaasa, A., & Andriani, L. (2022). Determinants of Institutional Trust: The Role of Cultural Context. *Journal of Institutional Economics*, 18(1), 45–65. <https://doi.org/10.1017/S1744137421000199>

Keefer, P., Rojas, A. M., Scartascini, C., & Valle, J. (2020). Trust to Advance Inclusive Growth. In: V. Nuguer, A. Powell (Eds), *Inclusion in Times of COVID-19* (pp. 41–52). Inter-American Development Bank. Retrieved from: <https://publications.iadb.org/publications/english/document/Inclusion-in-Times-of-Covid-19.pdf> (accessed: 6.05.2023).

Khadzhyradieva, S., Hrechko, T., & Savkov, A. (2019). Behavioral Insights in Public Policy: Ukrainian Case. *Public Policy and Administration*, 18(1), 85–99. <https://doi.org/10.5755/j01.ppa.18.1.23130>

Kuehnhans, C. R. (2019). The Challenges of Behavioural Insights for Effective Policy Design. *Policy and Society*, 38(1), 14–40. <https://doi.org/10.1080/14494035.2018.1511188>

Lades, L., & Nova, F. (2022). *Ethical Considerations When Using Behavioural Insights to Reduce People's Meat Consumption* (UCD Geary Institute for Public Policy Discussion Paper Series No. WP2022/09). Retrieved from: <https://www.ucd.ie/geary/static/publications/workingpapers/gearywp202209.pdf> (accessed: 1.06.2023).

Lahno, B. (2001). Institutional Trust: A Less Demanding Form of Trust? *Revista Latinoamericana de Estudios Avanzados*, 15, 19–58.

Lehner, M., Mont, O., & Heiskanen, E. (2016). Nudging – a Promising Tool for Sustainable Consumption Behaviour? *Journal of Cleaner Production*, 134(A), 166–177. <https://doi.org/10.1016/j.jclepro.2015.11.086>

Levi, M. (2022). Trustworthy Government: The Obligations of Government & the Responsibilities of the Governed. *Daedalus*, 151(4), 215–233. https://doi.org/10.1162/daed_a_01952

Melios, G. (2020). *Europe in Crisis: Political Trust, Corruption and Austerity*. The Institute for Global Prosperity, University College London. <https://doi.org/10.2139/ssrn.3847633>

Mensah, Y., & Chen, H.-Y. (2013). Global Clustering of Countries by Culture – an Extension of the GLOBE Study. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2189904>

- Miller, A. H. (1974). Political Issues and Trust in Government: 1964–1970. *American Political Science Review*, 68(3), 951–972. <https://doi.org/10.2307/1959140>
- Miłaszewicz, D. (2023). *Nudges jako narzędzia behawioralnej polityki publicznej i ich akceptowanie w Polsce*. Wydawnictwo Naukowe Uniwersytetu Szczecińskiego. <https://doi.org/10.18276/978-83-7972-667-7>
- Mont, O., Lehner, M., & Heiskanen, E. (2014). *Nudging. A Tool for Sustainable Behaviour?* (Swedish Environmental Protection Agency Report No. 6643). The Swedish Environmental Protection Agency. Retrieved from: <https://www.diva-portal.org/smash/get/diva2:1610786/FULLTEXT01.pdf> (accessed: 5.05.2023).
- Nagatsu, M. (2015). Social Nudges: Their Mechanisms and Justification. *Review of Philosophy and Psychology*, 6, 481–494. <https://doi.org/10.1007/s13164-015-0245-4>
- Norris, P. (2017). The Conceptual Framework of Political Support. In: S. Zmerli, T. W. G. van der Meer (Eds), *Handbook of Political Trust* (pp. 19–32). Edward Elgar Publishing.
- Norris, P. (2022). *In Praise of Skepticism: Trust but Verify*. Oxford University Press. <https://doi.org/10.1093/oso/9780197530108.001.0001>
- OECD. (2015). *Behavioural Insights and New Approaches to Policy Design. The Views from the Field. Summary of an International Seminar*. Retrieved from: <https://www.oecd.org/gov/regulatory-policy/behavioural-insights-summary-report-2015.pdf> (accessed: 4.03.2023).
- OECD. (2017a). *Behavioural Insights and Public Policy: Lessons from around the World*. OECD Publishing. <https://doi.org/10.1787/9789264270480-en>
- OECD. (2017b). *Trust and Public Policy: How Better Governance Can Help Rebuild Public Trust*. OECD Public Governance Reviews. OECD Publishing. <https://doi.org/10.1787/9789264268920-en>
- OECD. (2022). *Building Trust to Reinforce Democracy: Key Findings from the 2021 OECD Survey on Drivers of Trust in Public Institutions*. OECD Publishing. <https://doi.org/10.1787/b407f99c-en>
- Reisch, L. A., & Sunstein, C. R. (2016). Do Europeans Like Nudges? *Judgment and Decision Making*, 11(4), 310–325. <https://doi.org/10.1017/S1930297500003740>
- Schlag, P. (2010). Nudge, Choice Architecture, and Libertarian Paternalism. *Michigan Law Review*, 108(6), 913–924.
- Schmidt, A. T., & Engelen, B. (2020). The Ethics of Nudging: An Overview. *Philosophy Compass*, 15(4), e12658. <https://doi.org/10.1111/phc3.12658>
- Schubert, C. (2017). Green Nudges: Do They Work? Are They Ethical? *Ecological Economics*, 132, 329–342. <https://doi.org/10.1016/j.ecolecon.2016.11.009>
- Sevgin, M. (2020). Public Policy Implications of Cognitive Biases and Heuristics. *The Journal of International Social Research*, 13(72), 871–878.
- Sobiech, R. (2017). Zaufanie do władz publicznych. Efekt zaklinania deszczu a instytucjonalizacja nieufności. *Zoon Politikon*, 8, 61–86. <https://doi.org/10.4467/2543408XZOP.17.003.9262>

- Stern, P. C. (2020). A Reexamination on How Behavioral Interventions Can Promote Household Action to Limit Climate Change. *Nature Communications*, *11*, 918. <https://doi.org/10.1038/s41467-020-14653-x>
- Straßheim, H. (2020). The Rise and Spread of Behavioral Public Policy: An Opportunity for Critical Research and Self-reflection. *International Review of Public Policy*, *2*(1), 115–128. <https://doi.org/10.4000/irpp.897>
- Sunstein, C. R. (2013). *Behavioral Economics, Consumption, and Environmental Protection* (Regulatory Policy Program Working Paper No. RPP-2013-19).
- Sunstein, C. R., & Reisch, L. A. (2019). *Trusting Nudges: Toward a Bill of Rights for Nudging*. Routledge. <https://doi.org/10.4324/9780429451645>
- Sunstein, C. R., Reisch, L. A., & Kaiser, M. (2019). Trusting Nudges? Lessons from an International Survey. *Journal of European Public Policy*, *26*(10), 1417–1443. <https://doi.org/10.1080/13501763.2018.1531912>
- Sunstein, C. R., Reisch, L. A., & Rauber, J. (2017). *A World-wide Consensus on Nudging? Not Quite, but Almost* (Harvard Public Law Working Paper No. 17-39). <https://doi.org/10.2139/ssrn.2955693>
- Sunstein, C. R., Reisch, L. A., & Rauber, J. (2018). A Worldwide Consensus on Nudging? Not Quite, but Almost. *Regulation & Governance*, *12*(1), 3–22. <https://doi.org/10.1111/rego.12161>
- Tang, M., & Huhe, N. (2014). Alternative Framing: The Effect of the Internet on Political Support in Authoritarian China. *International Political Science Review*, *35*(5), 559–576. <https://doi.org/10.1177/0192512113501971>
- Tankard, M. E., & Paluck, E. L. (2016). Norm Perception as a Vehicle for Social Change. *Social Issues and Policy Review*, *10*(1), 181–211. <https://doi.org/10.1111/sipr.12022>
- Tannenbaum, D., Fox, C. R., & Rogers, T. (2017). On the Misplaced Politics of Behavioural Interventions. *Nature Human Behaviour*, *1*(7), 0130. <https://doi.org/10.1038/s41562-017-0130>
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Penguin.
- Torcal, M., & Christmann, P. (2021). Responsiveness, Performance and Corruption: Reasons for the Decline of Political Trust. *Frontiers in Political Science*, *3*, 676672. <https://doi.org/10.3389/fpos.2021.676672>
- UNDP. (2021). *Trust in Public Institutions. A Conceptual Framework and Insights for Improved Governance Programming*. Policy Brief, August. Retrieved from: https://www.undp.org/sites/g/files/zskgke326/files/migration/oslo_governance_centre/Trust-in-Public-Institutions-Policy-Brief_FINAL.pdf (accessed: 14.03.2023).
- van der Linden, S. (2018). The Future of Behavioral Insights: On the Importance of Socially Situated Nudges. *Behavioural Public Policy*, *2*(2), 207–217. <https://doi.org/10.1017/bpp.2018.22>

van der Meer, T., & Hakhverdian, A. (2017). Political Trust as the Evaluation of Process and Performance: A Cross-national Study of 42 European Countries. *Political Studies*, 65(1), 81–102. <https://doi.org/10.1177/0032321715607514>

Warren, M. E. (2018). Trust and Democracy. In: E. M. Uslaner (Ed.), *The Oxford Handbook of Social and Political Trust* (pp. 75–94). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190274801.013.5>

Xiaoxiao, M., & Zhou, S. (2022). News Media Effects on Political Institutional and System Trust: The Moderating Role of Political Values. *Asian Perspective*, 46(1), 157–181. <https://doi.org/10.1353/apr.2022.0006>

KREM, 2025, 1(1007): 49–74
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.15946>

The War-related Impacts on Tourism in Neighbouring Countries: Poland in the Face of the War in Ukraine

Ewa E. Kiczmachowska

Kozminski University, Department of Marketing, Jagiellońska 57, 03-301 Warszawa, Poland,
e-mail: ekiczmachowska@kozminski.edu.pl, ORCID: <https://orcid.org/0000-0002-7336-875X>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Kiczmachowska, E. E. (2025). The War-related Impacts on Tourism in Neighbouring Countries: Poland in the Face of the War in Ukraine. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 49–74. <https://doi.org/10.15678/krem.15946>

ABSTRACT

Objective: In contrast to countries directly involved in military conflicts or terrorism, where the impact on tourism has been always reported negatively, the conclusions for neighbouring countries were not entirely unequivocal: they either suffered from the proximity of warfare or benefited from a spill-over effect. The purpose of this research is to assess how war affects tourism in a neighbouring country with regard to the tourism crisis management framework, the fundamental motives framework, and consumer choice theory.

Research Design & Methods: The research was based on quantitative analysis of 29 variables (macroeconomic indicators, international and domestic tourist flows, refugee influx) for the first ten months of the conflict with respect to the hospitality sector in Poland.

Findings: The consequences of the war in Ukraine have not led to a decline in the intensity of tourism in Poland in the short term. The mix of foreign tourist flows combined with no significant effects on domestic travel, has resulted in a surprisingly stable performance.

Implications/Recommendations: No short-term decline in tourism intensity is a valuable insight for participants in the tourism sector, as it allows them time to adjust. However, sharp increases in energy and fuel costs along with inflation, constitute a threat to domestic demand in the longer term.

Contribution: While the war or postwar issues appear frequently in tourism literature in relation to countries directly involved, the research on neighbouring countries is rare. In contrast to previous research, this paper focused on a neighbouring country with tourism claiming a relatively low share of GDP and included direct and indirect war impacts.

Article type: original article.

Keywords: war, crisis, tourism, neighbouring country, Poland, Ukraine.

JEL Classification: Z32, L83, F51.

1. Introduction

On 24th February 2022, the army of the Russian Federation crossed the Ukrainian border and started the biggest military conflict in Europe since World War II, creating an unprecedented military and economic threat to neighbouring countries in Central and Eastern Europe. This shocking and inhuman step brought tragedy and death to Ukraine, as well as further turbulence to the regional and global economy that was already shaken by the COVID-19 pandemic. With Russia, the world's third largest oil producer and the world's largest exporter of oil to global markets, being responsible for 32% of the EU's and UK's total gas demand in 2021 (IEA, 2022), and being the world's largest wheat exporter in 2020 (FAO, 2022), serious economic turbulence was inevitable.

Likewise, the tourism industry that had just started recovering from the pandemic faced yet another threat. The US and Asian source markets could be particularly discouraged from travelling to Europe by this development, as these markets have been historically more risk averse. As source markets, Russia and Ukraine represented a combined 3% of global spending on international tourism as of 2020. UNWTO (2022) predicted that a prolonged conflict could translate into a loss of US \$14 billion in tourism receipts globally in 2022.

The available literature on warfare in relation to tourism mainly concerns countries directly involved in hostilities. Regarding the main actors of conflicts, scholars have investigated impacts of war or terrorism on the tourism sector, as well as post-war tourism rebuilding strategies. A separate stream of research addresses tourism to former war/terror/death sites (e.g., thanatourism, memory tourism). However, what remains relatively under researched is the impact of war or terrorism on tourism in neighbouring countries, defined as countries with geographical or/and cultural proximity to the country of interest (Perles-Ribes *et al.*, 2018; Buigut, Kapar & Braendle, 2022). These countries, although not directly involved in the conflict, are often greatly impacted by it.

The present research represents a step toward addressing this gap. Poland, as a neighbouring country to the recent armed aggression of the Russian Federation

against Ukraine, serves as a unique context to study the effects of the upheaval of war on a neighbouring country's tourism industry. Based on the tourism crisis management framework (Faulkner, 2001), fundamental motives framework (Griskevicius & Kenrick, 2013), consumer choice theory (Greenlaw & Shapiro, 2017) and tourism and war framework (Teye, 1988, as cited in Mihalić, 1996), this paper attempts to shed light on the effects of war on tourism with regard to macroeconomic turbulence caused by the war in a neighbouring country. It thus extends the warfare and tourism research on the initial phase of the conflict, focusing on short-term effects.

The rest of the article is structured as follows. The next section presents the literature review. Subsequently, the methodology of the research is explained, followed by the results, discussion, and conclusions.

2. Literature Review

Negative events affecting businesses and societies can originate from different sources. Those originating from internal inefficiencies of an organisation are defined as crises, while those of external origin (regardless of whether they are caused by natural or human forces) are defined as disasters (Faulkner, 2001; Berbekova, Uysal & Assaf, 2021). Both crises and disasters have been the subject of much research, and respective frameworks with respect to tourism are available (Faulkner, 2001; Ritchie, 2004, 2008; Ritchie & Jiang, 2019; Wut, Xu & Wong, 2021).

The available literature on war and warfare in relation to tourism mainly concerns countries directly involved in the events. Specifically, the research covers the negative effects of war on tourism sectors or recovery strategies applied after the conflict. A separate stream of research is devoted to warfare tourism, which includes visiting war memorials and museums, "war experiences," battle re-enactments, and battlefield tours.

The research on former war arenas has covered many geographical areas. For example, scholars have analysed the impact of the Sri Lankan Civil War on international tourist arrivals to Sri Lanka (Selvanathan, 2007); presented the post-war state of tourism and opportunities for development strategies (Fernando, Bandara & Smith, 2013; Fernando & Jayawardena, 2013; Dissanayake & Samarathunga, 2021); evaluated the impact of the Balkan war on Slovenian inbound tourism in former Yugoslavia (Mihalić, 1996); and addressed the development of warfare tourism sites, such as memorial sites and war museums, in Croatia and Bosnia (Naef, 2016; Šuligoj, 2017). Research has covered African destinations including Botswana (Gumbo, 2014) and Kenya (Buigut & Amendah, 2016), and Senbeto (2022) provided a comprehensive review of crisis management literature in Africa. Other research has covered the Kurdistan region of Iraq (Omer & Yeşiltaş, 2020); assessed the negative effects of events of violence on tourism development in the mountain area

of Chitral, Pakistan (Rahman *et al.*, 2011); investigated tourism-oriented approaches in the reconstruction of buildings and landmarks on the Iran/Iraq border (Mirisaee & Ahmad, 2018); critically assessed tourism industry development after the civil war in Guatemala (Devine, 2016); and considered the role of battlefield memorials and war museums in shaping perceptions of Vietnam War (Gillen, 2014; Madigan & West, 2023).

For countries directly involved in military conflicts or terrorism, the reported effects on tourism sectors are always negative. However, in the scarce literature on neighbouring countries, the conclusions are less unequivocal. Perles-Ribes *et al.* (2018) studied the recent Arab uprisings and their impact on tourism locations in the Mediterranean area, identifying negative effects on international tourist arrivals in Egypt and Tunisia (directly involved countries), positive results in Morocco and Turkey, and unclear impacts on Spain and Greece. Buigut, Kapar and Braendle (2022) found that increasing terrorism in Malaysia had a negative impact on foreign tourists' arrivals to the country. Further, mixed spillover effects of acts of terrorism were found in neighbouring countries; for example, the growth of terrorism in Thailand boosted, while that in Indonesia and the Philippines decreased, international arrivals to Malaysia (Buigut, Kapar & Braendle, 2022).

While the existing research on neighbouring countries has employed international tourist arrivals as the dependent variable, the present study delves deeper. First, rather than just arrivals, it considers tourism intensity, defined as the number of tourists accommodated and number of overnight stays. Second, it divides the international tourism intensity by country type: aggressor (Russia), ally (Belarus), under attack (Ukraine), other neighbouring countries (Central Eastern Europe), and more distant locations (other European and non-European countries). Third, it includes the previously omitted domestic tourism intensity. Fourth, the tourism intensity in Poland is analysed in five regions to identify the impacts on the areas located closest to the war arena (i.e., Eastern border). Moreover, this study includes additional variables that may impact tourism intensity, including the influx of war refugees, the duration and intensity of the war, and macroeconomic indicators (energy/fuel costs and inflation). While Perles-Ribes *et al.* (2018) compare real to predicted international arrivals (using ARIMA and CausalImpact), and Buigut, Kapar and Braendle (2022) build a fully modified OLS model (using terrorism events and fatalities, both regional and by country), this study covers a broader array of direct and indirect war impacts and employs correlation analysis to verify the hypotheses. Table 1 presents a comparison of the existing research and this study.

As stated above, the impact of military conflicts on the tourism of neighbouring countries is not unidirectional and requires further research. Moreover, the neighbouring countries studied so far were clearly sun-and-sea destinations, while

Poland is not a major tourism destination: in 2020, the share of (direct) tourism GDP in total GDP was only 1.2% compared to the OECD average of 4.4% (OECD, 2020).

Table 1. Research on the Impact of War or Terrorism on Neighbouring Countries

Specification	Event	Neighbouring Countries	Variables	Method
Perles-Ribes <i>et al.</i> (2018)	Arab uprisings in Egypt and Tunisia	Morocco, Turkey, Spain, Greece	– international tourist arrivals, real vs. predicted – 1980–2014 yearly data	ARIMA and CausalImpact
Buigut, Kapar & Braendle (2022)	Terrorism in the Philippines, Thailand, and Indonesia	Malaysia	– international tourist arrivals overall and by four source continents – terrorism events and fatalities, regional and by country, exchange rates – 2000–2017 quarterly data	Fully modified OLS model
This study	War in Ukraine – aggressor: Russian Federation, aggressor’s ally: Belarus	Poland	– tourism intensity (tourists accommodated and overnight stays): foreign (overall and by source country/region); domestic (overall); regional (distribution within Poland) – influx of war refugees – war duration and intensity – energy costs, fuel costs, and inflation – 2018–2022 monthly data	Correlation

Source: the author.

3. Methodology

3.1. Theoretical Framework

War can impact tourism in a neighbouring country directly (by preventing foreign tourists from arriving in areas near the warzone) (Perles-Ribes *et al.*, 2018; Buigut, Kapar & Braendle, 2022), but it can also do so indirectly by causing turbulence in macroeconomic indicators, which in turn influence consumer decisions regarding domestic tourism.

Regarding indirect impacts, the EU responded to the Russian attack on Ukraine with a series of sanction packages (Consilium, 2023). With Russia being an important supplier of energy sources to Europe, this resulted in energy price increases (e.g., Poland switched its source of coal from Russia to more expensive sources;

Sawicki, 2022). Therefore, if the country involved in the warfare played a significant role in the regional or global energy market, the effects would be as follows:

H1: The longer the war duration, the higher the (H1a) energy costs, (H1b) fuel costs, and (H1c) inflation in neighbouring countries.

The consumer choice theory suggests that, assuming the budget remains unchanged, a price increase in essential products/services leads to a reduction in consumption of non-essential goods (e.g., dining out, travel) or postponement of investment (e.g., new car, new refrigerator) (Greenlaw & Shapiro, 2017). Thus:

H2: The higher the energy, fuel costs, and inflation, the lower the domestic tourism intensity in neighbouring countries.

Turning to the direct impact of war on tourism in neighbouring countries, Campbell *et al.* (2020) describe external threats as both actual and potential dangers to human wellbeing. According to the fundamental motives framework, one of the most deep-seated evolutionary motives is the drive to avoid physical harm, which continues to impact much modern consumer behaviour (Griskevicius & Kenrick, 2013). In the tourism context, this motive would translate into avoiding travel into areas close to military conflicts. Such avoidance would impact tourism intensity, especially foreign tourist flows, in neighbouring countries. Additionally, Teye (1988, as cited in Mihalić, 1996) described impacts on tourism of the directly involved country, of which adverse publicity in international media and “blacklisting” by travel agencies and foreign authorities could be extended to neighbouring countries. Thus:

H3: The stronger the war intensity, the lower the foreign tourism intensity in neighbouring countries.

3.2. Variables

Variables proposed for the framework, including their operationalisation and data sources, are reported in Table 2. The analysis period was January 2018–December 2022. This time horizon made it possible to capture pre-COVID-19 trends; however, due to the pandemic’s substantial impact on tourism, it was not possible to entirely separate the two disasters’ effects. The frequency for all data was monthly.

The variables describing the *war* were *duration* and *intensity*. The duration was operationalised by assigning 0 for the months before the war breakout, while February 2022 (the first month of the war) was assigned 1, March 2022 – 2, April 2022 – 3, and so on. War intensity was operationalised by the intensity of the media coverage that shaped tourists’ perceptions of the conflict. The vital role of international media in shaping tourists’ destination decisions has been confirmed by prior research (Avraham, 2013; Gumbo, 2014; Tarlow, 2015). Therefore, the study used the Global Online News Coverage (volume intensity: % monitored articles) by

GDELT Project, which monitors the world's broadcast, print, and web news from nearly every corner of every country in more than 100 languages (GDELT, 2023). The search details were as follows: Data Source: Global Online News Coverage; Human Summary: (Ukraine OR Ukrainian OR Kiev OR Kyiv) AND Publication-Date \geq 1/1/2018.

The *refugee influx* was measured by the *number of people evacuated to Poland (the area bordering Ukraine)* from the Polish Border Guards, who provide statistical information based on their databases (Border Guards, 2023).

The macroeconomic indicators affected by the war and impacting domestic tourism intensity were *energy costs*, *fuel costs*, and *inflation*. The energy costs variable was operationalised by the *price index of sold production in electricity, gas, steam and hot water generation and supply* as reported by Statistics Poland. For the fuel costs variable, the study used the average *retail price of Euro 95 gasoline in gas stations in Poland* as reported by Bankier.pl website (leading banking and business website offering content and tools facilitating decision making in money management; Bankier.pl, 2023). For inflation, Statistics Poland data were used, applying the *index of increase in prices of consumer goods and services* indicator (Statistics Poland, 2022a).

The *demand side* was described by *foreign tourism intensity* and *domestic tourism intensity*. Two indicators reported monthly by Statistics Poland (2022b) were analysed: *number of tourists accommodated (NoTA)* and *number of overnight stays (NoOS)*.

Table 2. Sources and Operationalisation of Variables

Group	Number	Variable	Source	Operationalisation of the Variable
Time	1	Time	–	Calendar months
War	2	War duration	–	0 for non-war months, 1 = February, 2 = March, 3 = April, etc.
	3	War intensity	GDELT (2023)	Global Online News Coverage: volume intensity (% monitored articles)
Refugees	4	Refugee influx	Border Guards (2023)	People evacuated to Poland (area bordering Ukraine)
Macroeconomic indicators	5	Energy costs	Statistics Poland (2022a)	Price index of sold production in electricity, gas, steam and hot water generation and supply
	6	Fuel costs	Bankier.pl (2023)	Average retail price of Euro 95 gasoline in gas stations in Poland
	7	Inflation	Statistics Poland (2022a)	Index of increase in prices of consumer goods and services

Table 2 cnt'd

Group	Number	Variable	Source	Operationalisation of the Variable
Demand	8	Tourism intensity	Statistics Poland (2022b)	Number of tourists accommodated (NoTA) in tourist accommodation establishments
	9			Number of overnight stays (NoOS) in tourist accommodation establishments
	10	Foreign tourism intensity	Statistics Poland (2022b)	Number of foreign tourists accommodated (FNoTA) in tourist accommodation establishments
	11			Number of overnight stays of foreign tourists (FNoOS) in tourist accommodation establishments
	12			FNoTA: Russia
	13			FNoTA: Belarus
	14			FNoTA: Ukraine
	15			FNoTA: CEE
	16			FNoTA: other Europe
	17			FNoTA: non-Europe
	18			FNoOS: Russia
	19			FNoOS: Belarus
	20			FNoOS: Ukraine
	21			FNoOS: CEE
	22			FNoOS: other Europe
	23			FNoOS: non-Europe
	24	Domestic tourism intensity	Statistics Poland (2022b)	Domestic NoTA
	25			Domestic NoOS
	26	Regional tourism distribution within Poland	Statistics Poland (2022b)	NoTA by region
	27			NoOS by region
	28			Eastern border: NoTA by foreign/domestic
	29			Eastern border: NoOS by foreign/domestic

Notes: The frequency for all data was monthly.

Source: the author.

Foreign tourism intensity was additionally analysed across countries to spot the potential discrepancies in behaviours: Ukraine, Russia, Belarus, Central Eastern Europe (CEE: Bulgaria, Czech Republic, Estonia, Lithuania, Latvia, Romania, Slovakia, Hungary), Europe Other, and non-Europe. Belarus has not been openly involved in the conflict but has been subject to EU and USA sanctions due to

providing logistic and operational support to the Russian army. CEE countries have been grouped for their similar proximity to the warzone and historically close economic ties to Russia.

Further, the regional distribution of tourism intensity within Poland was analysed to spot any signs of tourists avoiding Eastern border locations in close proximity to Ukraine, Belarus, and the Russian Federation. For the purpose of the analysis, the administrative districts were grouped into: seaside (North), mountains (South), Eastern border (districts along the eastern border of Ukraine, Belarus and Kaliningrad Oblast of Russian Federation), Central/West (no particular tourist attractions), and Mazovian (capital city, Warsaw district).

3.3. Data Analysis

The data were analysed in two steps. First, descriptive analysis of the data was performed, comparing data and revealing trends. Second, correlation analysis was performed using SPSS to verify the hypotheses. To estimate the correlations of the war to the analysed indicators, it was necessary to choose the appropriate (non-war) baseline. In analysing the data, it was difficult to separate the effects of the outbreak of the war in Ukraine and the COVID-19 pandemic preceding it. In view of this, the author decided to take the years of 2018–2019 as the best possible (and simplest) benchmark. Therefore, the data for 2022 were directly compared to those from 2018–2019, excluding the pandemic years of 2020–2021. The analyses were thus conducted on 34 months' data: 24 from 2018–2019 and 10 from 2022.

4. Results

4.1. Macroeconomic Indicators

The world economy has faced many challenges in recent years, including the COVID-19 pandemic, climate change, energy supply issues, and migration crises. Following the Russian armed aggression against Ukraine and the subsequent sanction packages imposed on Russia by the EU (Consilium, 2023), additional problems appeared: millions of refugees from Ukraine, food supply issues, energy crises, and high inflation (Osiecki, 2022). In Poland, fuel costs started growing in 2021, but the war accelerated the increases in fuel costs and energy costs (Fig. 1a). Also, inflation reached its highest level since 1997 (Fig. 1a).

The immediate result of the war was the influx of refugees into Poland. The refugees were hosted by private citizens, temporary reception halls, or accommodation establishments, with special government support programmes employed to recover the costs of hosting them. As reported by Statistics Poland (2022c), out of 6.8 billion overnight stays provided in March 2022 by accommodation establishments offering ten or more beds, 1.1 billion were given to refugees from Ukraine.

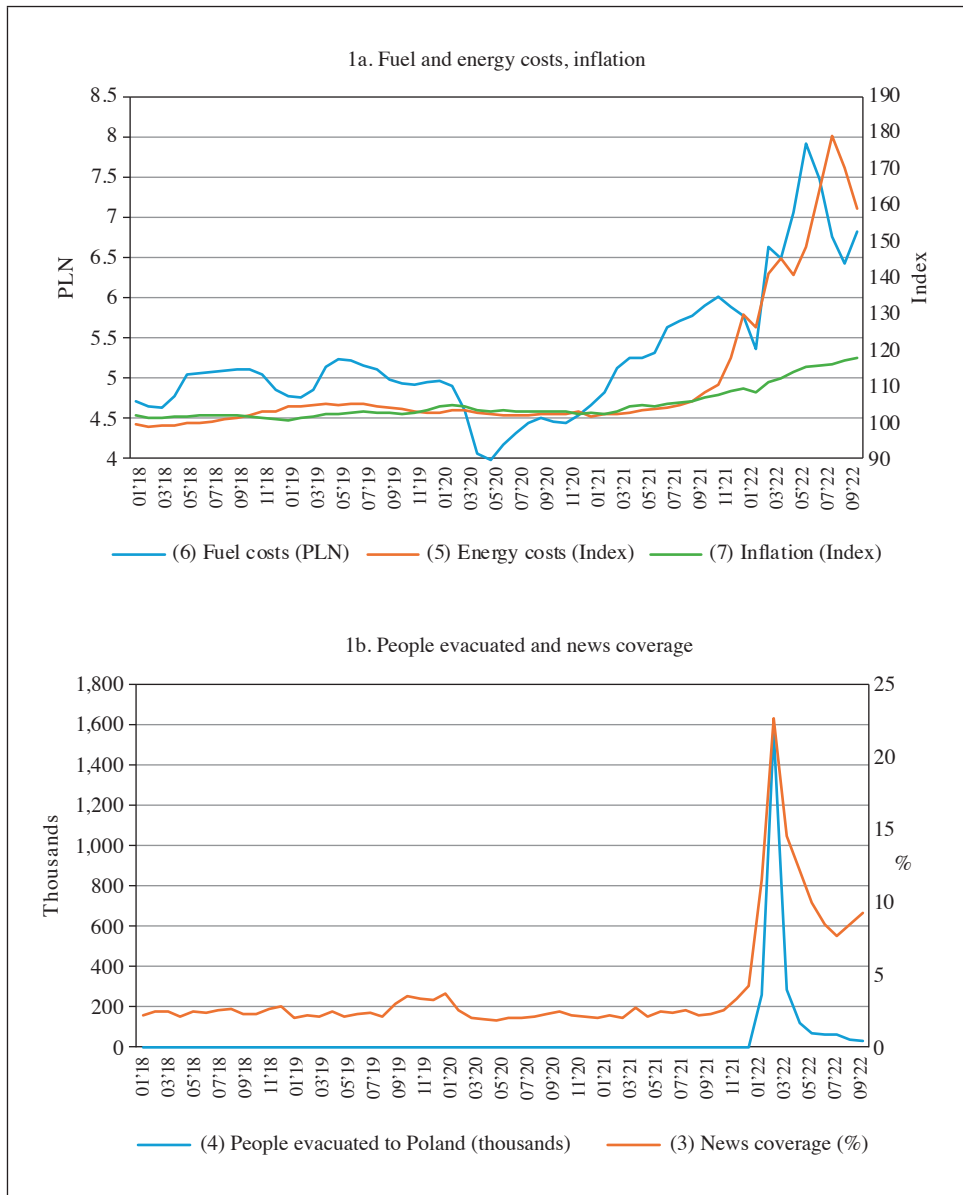


Fig. 1. Fuel and Energy Costs, Inflation, People Evacuated to Poland, News Coverage
 Source: the author, based on Statistics Poland (2022a), Bankier.pl (2023), Border Guards (2023), GDELT (2023).

The largest number of refugees from Ukraine (number of people evacuated to Poland – area bordering Ukraine) crossed the border in March 2022 (Fig. 1b). This was also the period of the highest intensity of news coverage, as reported by the GDELT Project. At the peak moment, 23% of all media coverage monitored globally concerned the war in Ukraine (Fig. 1b).

4.2. Demand

When analysing the demand side of the framework, the NoTA and NoOS indicators were analysed in four ways. First, total numbers were analysed, and the data were compared for the first ten months of five consecutive years (from 2018 to 2022) (Fig. 2). Second, trends in domestic vs. foreign tourist data were analysed (Fig. 3). Third, the foreign tourist data were split to identify any trends in their behaviour related to the country of citizenship (Fig. 4, Table 3). Fourth, the regional distribution of tourism intensity within Poland was analysed to identify any signs of tourists avoiding Eastern border locations in close proximity to Ukraine, Belarus, and the Russian Federation (Fig. 5–6).

As indicated earlier, the years 2020–2021 were impacted by the COVID-19 pandemic, so the study focused on comparing 2022 with 2018–2019. The year 2022 displayed similar patterns to 2018–2019 in terms of both NoTA (Fig. 2a) and NoOS (Fig. 2b). In fact, averages and peak summer months fell between 2018 and 2019 values, with only the minimum value (January) being lower. Thus, it might seem that business had returned to pre-pandemic patterns. However, this was not exactly the case.

Looking at the split of NoTA (Fig. 3a) and NoOS (Fig. 3b) into domestic and foreign tourists, the change in their proportions is visible. While for 2018–2019 the proportions of domestic vs. foreign tourists were stable at 79.1% for NoTA and 80.4–80.3% for NoOS, the proportions for 2022 were more in favour of domestic tourists (83.5% for NoTA and 84.2% for NoOS). This can be attributed to the fact that the number of foreign tourists arriving in Poland decreased in 2022, unlike domestic tourists (5.8% increase vs. 2018 and 0.6% vs. 2019, for NoTA indicator).

Regarding foreign tourists, the indicators were analysed through the lens of citizenship, considering Russia, Belarus, Ukraine, CEE, Other Europe, and non-Europe (Fig. 4). Although the total NoTA (Fig. 4a) and NoOS (Fig. 4b) for foreign tourists decreased compared to 2019, the trend was not equal for all the source directions (Table 3). In the case of Russia and Belarus, the decrease in both indicators was mostly the result of travel limitations imposed by the EU (Consilium, 2023). Ukraine's increase was the result of the influx of refugees, who were partly accommodated at tourist accommodation establishments.

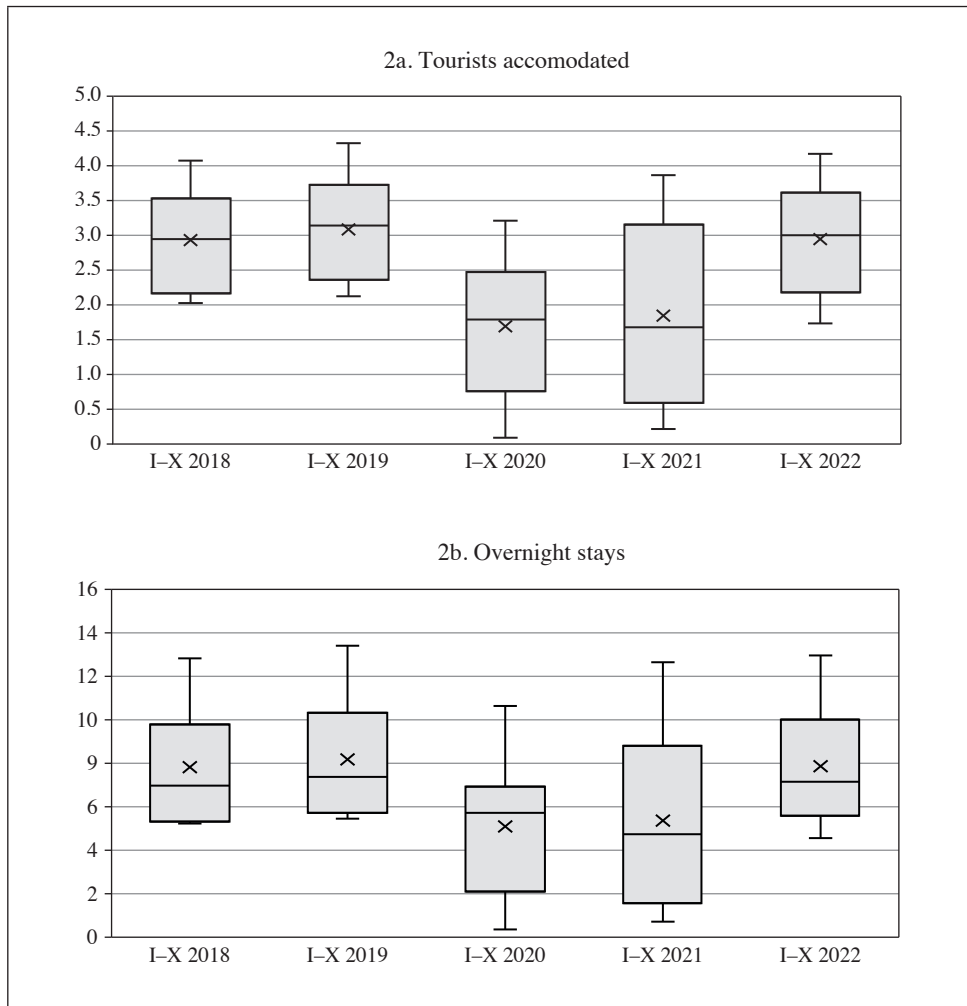


Fig. 2. Number of Tourists Accommodated and Overnight Stays (10 Months of 2018–2022) (in Millions)

Source: the author, based on Statistics Poland (2022b).

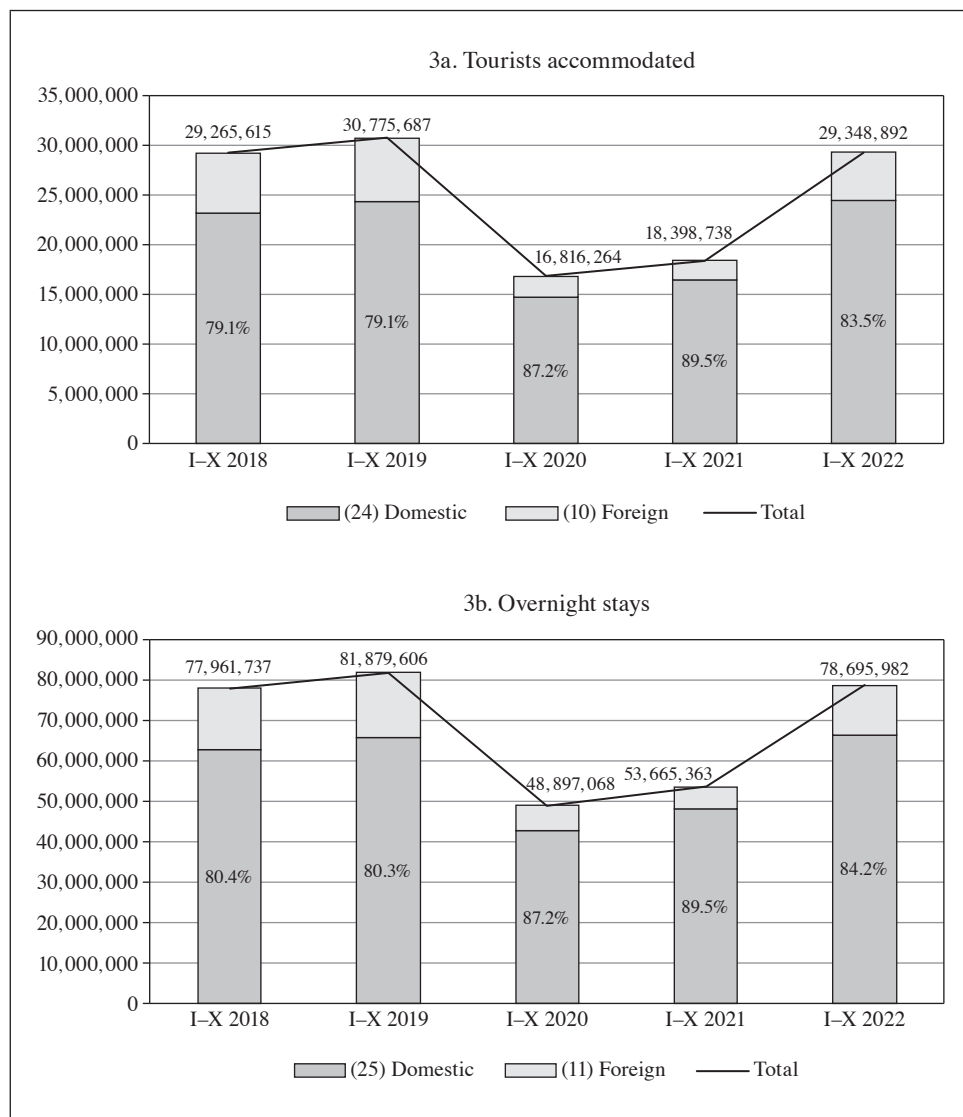


Fig. 3. Domestic vs. Foreign Split of Tourists Accommodated and Overnight Stays

Source: the author, based on Statistics Poland (2022b).

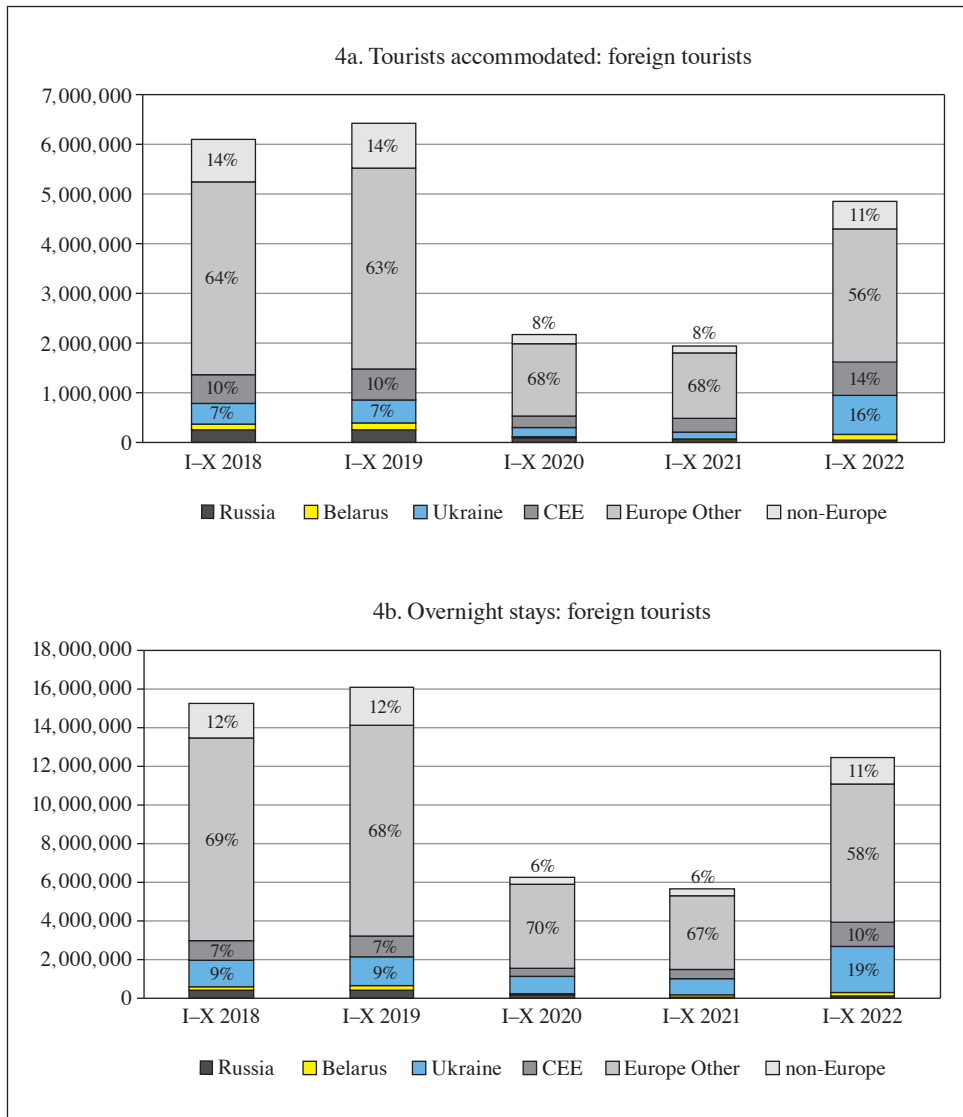


Fig. 4. Foreign Tourists by Citizenship (Tourists Accommodated and Overnight Stays)

Source: the author, based on Statistics Poland (2022b).

The remaining countries were grouped into CEE, Other Europe, and non-Europe. Tourists from European countries other than CEE constituted the biggest group of foreign tourists accommodated in Poland in 2018–2019 and 2022. In 2022, compared to 2019, their 33.3% decrease in NoTA and 34.3% decrease in NoOS (Table 3) resulted in the decrease of their share in NoTA from 63% to 56% (Fig. 4a) and in NoOS from 68% to 58% (Fig. 4b).

Table 3. Foreign Tourists Split by Citizenship Dynamics

Specification	Russia	Belarus	Ukraine	CEE	Other Europe	Non-Europe
Tourists accommodated (NoTA)						
I–X 2019	244,139	140,791	463,742	629,264	4,040,515	901,586
I–X 2022	43,947	107,089	791,957	658,592	2,696,611	553,953
Dynamics	–82.0%	–23.9%	70.8%	4.7%	–33.3%	–38.6%
Overnight stays (NoOS)						
I–X 2019	393,530	222,471	1,493,432	1,108,927	10,939,772	1,932,372
I–X 2022	86,957	201,352	2,389,115	1,245,078	7,188,630	1,344,960
Dynamics	–77.9%	–9.5%	60.0%	12.3%	–34.3%	–30.4%

Source: the author, based on Statistics Poland (2022b).

A similar pattern of 30–40% decrease in both indicators could be observed for non-European countries (Table 3). For Other Europe and non-Europe regions, this could be a response to the war proximity in line with the fundamental motives framework, which indicates that consumers will avoid situations constituting a risk to their health or wellbeing.

In contrast, the NoTA and NoOS from CEE increased in 2022 vs. 2019 by 4.7% and 12.3% respectively (Table 3). The CEE countries are situated similarly to Poland in their proximity to the war in Ukraine. Thus, their citizens' travel to Poland would not increase the risk to their health or wellbeing compared to their home country. Therefore, the fundamental motives framework would not apply here, and tourists would return to their pre-COVID-19 travel habits.

Another analysis focused on regional distribution of tourism intensity within Poland to identify any signs of tourists avoiding Eastern border locations (Fig. 5–6)

The 2022 vs. 2019 comparisons of the regional distribution of tourism intensity within Poland (Fig. 5) show a slight decrease in Eastern border region shares in NoTA (from 17.6% to 16.7%; Fig. 5a) but no change in NoOS (11.5% vs. 11.6%; Fig. 5b). This could potentially indicate tourists avoiding the region; however, as a similar trend is visible for the Central/West region, this conclusion seems unsupported.

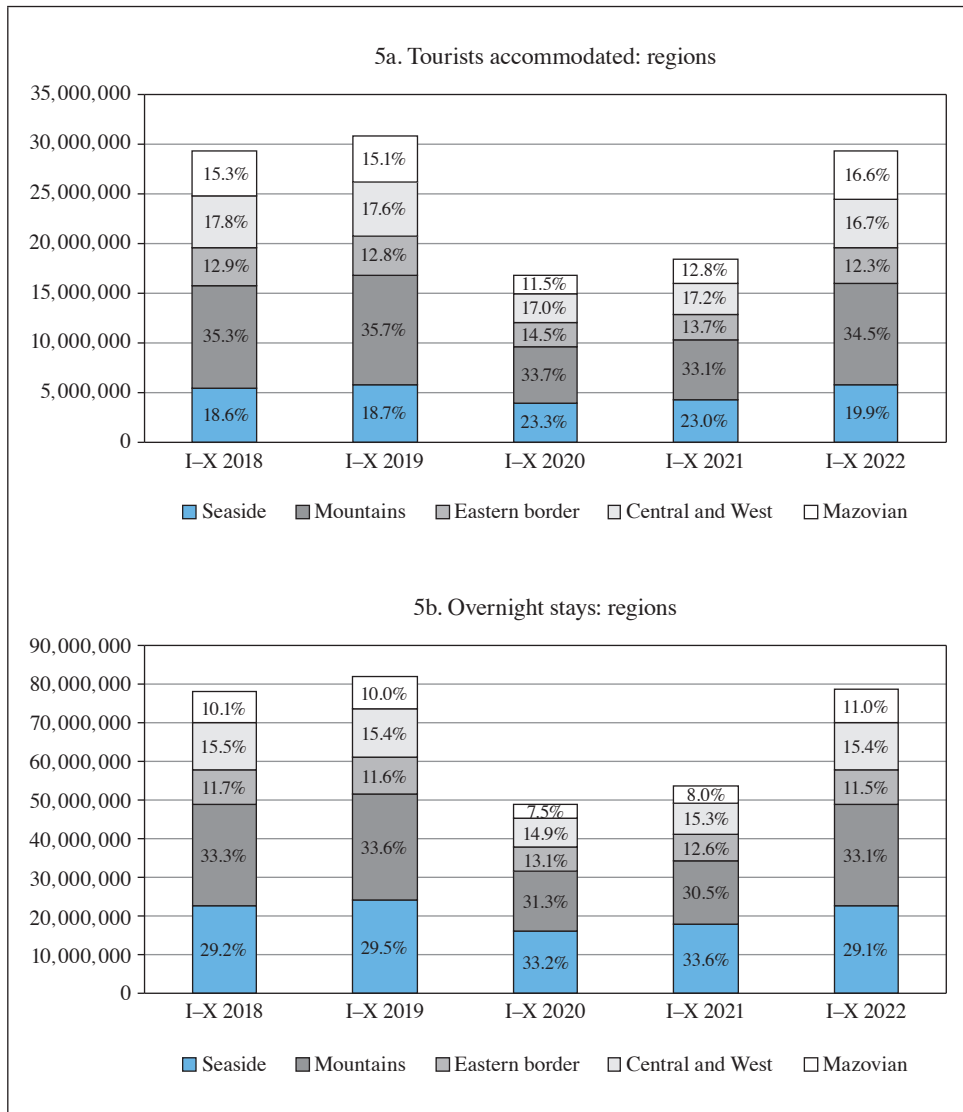


Fig. 5. Regional Distribution of Tourism Intensity within Poland

Source: the author, based on Statistics Poland (2022b).

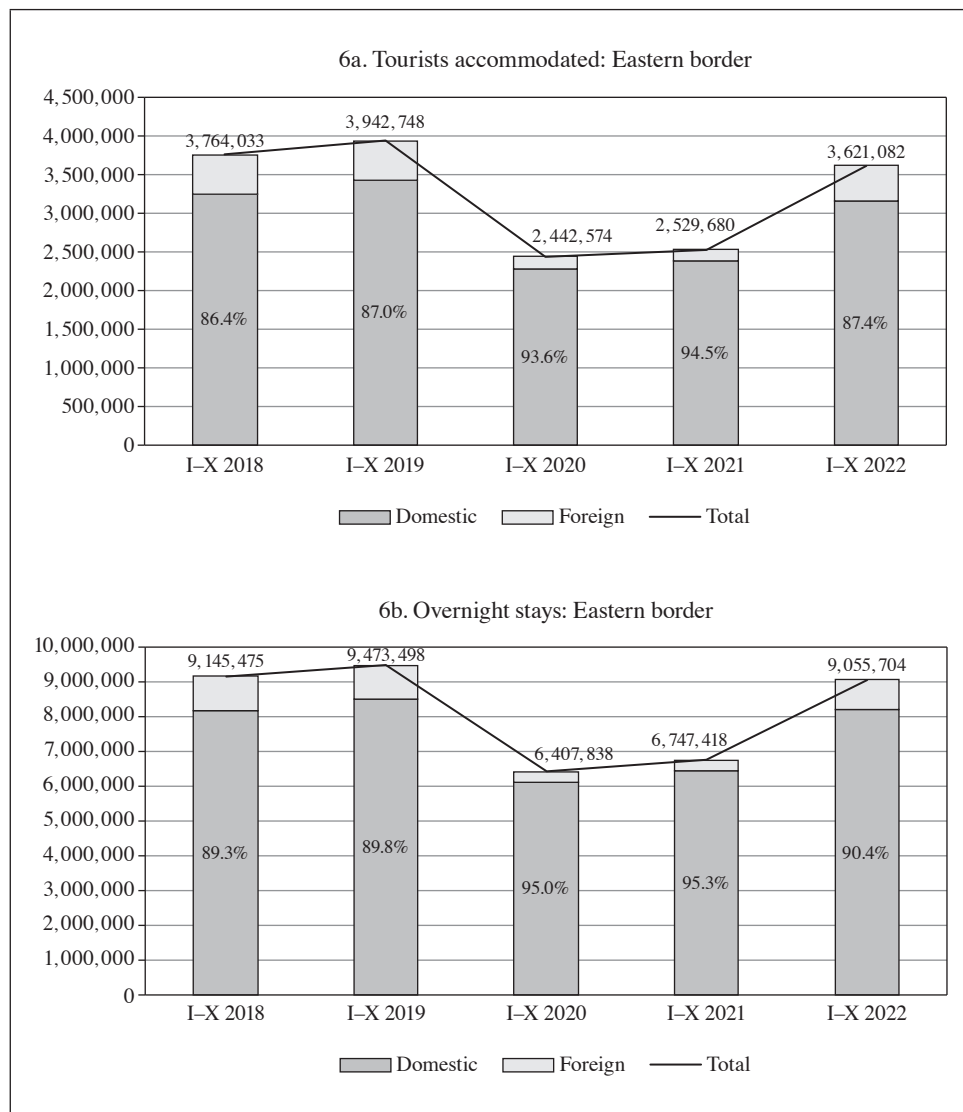


Fig. 6. Eastern Border Region by Domestic and Foreign Tourism Intensity
 Source: the author, based on Statistics Poland (2022b).

When comparing the split of domestic vs. foreign tourists' behaviour within the Eastern border region (Fig. 6), a minor increase in domestic indicators can be seen (from 87% to 87.4% for NoTA, Fig. 6a; from 89.8% to 90.4% for NoOS, Fig. 6b); however the changes seem too small to justify any firm conclusions.

4.3. Hypotheses Testing

Regarding indirect war impacts, as shown in Table 4, the war duration was significantly positively correlated with energy costs (0.934; $p < 0.01$), fuel costs (0.843; $p < 0.01$), and inflation (0.932; $p < 0.01$). These findings confirm H1a, H1b, and H1c, which stated that longer war duration would be associated with increased energy costs, fuel costs, and inflation, at least in the initial phase.

Table 4. Pearson's Correlations: War Duration, Domestic Tourists, and Macroeconomic Indicators, $N = 34$

Specification	(2) War Duration		H1	(24) Domestic Tourists Accommodated (NoTA)		H2
(5) Energy costs	0.934**	$p < 0.01$	confirmed	0.319	$p = 0.066$	rejected
(6) Fuel costs	0.843**	$p < 0.01$	confirmed	0.390*	$p = 0.023$	confirmed
(7) Inflation	0.932**	$p < 0.01$	confirmed	0.303	$p = 0.082$	rejected

** $p < 0.01$; * $p < 0.05$.

Source: the author, based on Statistics Poland (2022a, 2022b).

Regarding indirect war impacts, relations were hypothesised between macroeconomic indicators and domestic tourist intensity (H2). As shown in Table 4, domestic NoTA had no significant relation to energy costs (0.319; $p = 0.066$) or to inflation (0.303; $p = 0.082$), while its relation to fuel costs was estimated as positive and moderately significant (0.390; $p = 0.023$), suggesting that domestic tourists were not discouraged in the short term by the adverse macroeconomic forces effects of the war, seemingly refuting the consumer choice theory. However, these relations need to be assessed in the longer term, as growing household costs and inflation should finally translate into a decline in domestic tourists' activities.

Regarding the direct war impacts (H3, Table 5), the fundamental motives framework would apply only to the behaviours of tourists from more distant locations (Other Europe and non-Europe). For these groups, NoTA showed a significant negative correlation to war intensity (respectively: -0.421 ; $p = 0.013$, and -0.376 ; $p = 0.028$), supporting H3. The behaviours of the remaining groups were either driven by sanctions or resulted from the presence of war refugees. Due to the travel ban imposed by the EU on Russia and Belarus, their NoTA showed a significant

negative correlation to war intensity (Russia: -0.754 ; $p < 0.01$, Belarus: -0.407 ; $p = 0.017$) (Table 5). In contrast, due to the high number of refugees from Ukraine being hosted in accommodation establishments, the correlation of NoTA from Ukraine to war intensity was estimated as significant and positive (0.813 ; $p < 0.01$). The NoTA from CEE (-0.003 ; $p = 0.988$) and domestic tourists (-0.024 ; $p = 0.893$) showed no significant relation to war intensity, as their travel to Poland did not increase their risk of personal physical harm due to the war; therefore, the fundamental motives framework would not apply here.

Table 5. Pearson's Correlations: War Intensity, Foreign Tourists by Citizenship, $N = 34$

Specification	(3) War Intensity		H3
(10) Foreign tourists	-0.297	$p = 0.088$	rejected
(12) Russia	-0.754^{**}	$p < 0.01$	not applicable
(13) Belarus	-0.407^*	$p = 0.017$	not applicable
(14) Ukraine	0.813^{**}	$p < 0.01$	not applicable
(15) CEE	-0.003	$p = 0.988$	rejected
(16) Europe Other	-0.421^*	$p = 0.013$	confirmed
(17) Non-Europe	-0.376^*	$p = 0.028$	confirmed
(24) Domestic tourists	-0.024	$p = 0.893$	not applicable

** $p < 0.01$; * $p < 0.05$.

Source: the author, based on Statistics Poland (2022b), GDELT (2023).

It is worth mentioning that the statistical significance of aforementioned correlations does not necessarily assume the causality between them. The causality between the war and the macroeconomic indicators was confirmed by economists prior to this research (Osiecki, 2022; Sawicki, 2022). In the case of tourist flows from Russia, Belarus, and Ukraine, the causality attributed to the war is not disputable. As for the remaining relations, the confounding factor of COVID-19 is discussed at length in the next section.

5. Discussion and Conclusions

Although much literature has addressed the impact of wars and terrorism on the tourism industry of directly involved countries, the impact on neighbouring countries has been little researched. Additionally, the available research concerned mainly sun-and-sea destinations, while this paper focused on a neighbouring country with a relatively low GDP share of tourism. Moreover, the existing research investigated the direct impacts of war or terrorism events (e.g., number of casualties or fatalities) on international tourist arrivals, while this paper also included indirect

impacts of energy costs, fuel costs, and inflation and delved much deeper into the demand side (domestic, regional, refugee influx), covering a broad number of indicators (29 variables), thereby making a valuable contribution to the literature on tourism disaster management in its emergency phase.

The direct impacts of war intensity on the flows of foreign tourists varied according to the tourists' country of origin. There was a decline in visits from the aggressor country (Russia) and its ally (Belarus), largely due to travel sanctions. Conversely, there was an increase in stays by citizens from the country under attack (Ukraine), as refugees were partly accommodated in tourist establishments. Tourists from other neighbouring Central and Eastern European countries showed no significant change in numbers. However, there was a decline in tourist visits from more distant regions (other parts of Europe and non-European countries), which aligns with the fundamental motives framework. Although the decline in number of tourists from more distant regions aligns with the results from the previous research (Buigut, Kapar & Braendle, 2022), no prior research has delved into the issue of countries' roles in the conflict (aggressor, ally, under attack), which can considerably alter the trends (sanctions, refugee influx). Also, the existing research covered solely sun-and-sea destinations, where both directly involved and neighbouring countries were major recipients of foreign tourists (Mediterranean and South East Asia). Such countries could benefit from international tourists redirecting their trips from directly involved countries (e.g., Turkey and Morocco as beneficiaries of conflicts in Egypt and Tunisia; Perles-Ribes *et al.*, 2018; Malaysia as a beneficiary of terrorism events in Thailand; Buigut, Kapar & Braendle, 2022) or suffer from the geographical/cultural proximity to directly involved countries (e.g., Malaysia suffering from terrorism events in Indonesia and Philippines; Buigut, Kapar & Braendle, 2022). For this study, where neither of the focal countries was a sun-and-sea destination, such spillover effects would not apply; rather, the vital role of shaping tourism in the neighbouring country would be played by domestic tourists. The fundamental motives framework would also not apply here, especially as the Eastern border region of Poland (the closest to the territories of the participants in the war) has never been an attractive domestic tourism destination. Instead, the indirect impacts of the macroeconomic situation in relation to the consumer choice theory should be considered.

These indirect impacts include those of increasing energy costs, fuel costs, and inflation caused by the war or war sanctions on domestic tourism demand. According to the consumer choice theory, increasing energy and fuel costs along with high inflation should lead consumers to limit travel activities and thus to limit domestic tourism activities. Surprisingly, in the first ten months after the outbreak of the war, no significant change in domestic tourism intensity was reported, seemingly refuting the consumer choice theory. However, this requires further investigation, as

the effect could be delayed. The internal economic situation was used as an attempt to explain the uncertain impacts of Arab uprisings on tourism in Greece and Spain (Perles-Ribes *et al.*, 2018); however, no subsequent research followed this path.

Overall, the consequences of the war in Ukraine have not translated into a decline in Poland's tourism intensity in the short term. This is a valuable insight for practitioners, as it allows them time to adjust. The mix of foreign tourist flows combined with no significant short-term effects on domestic travel resulted in surprisingly reliable performance, almost reaching pre-pandemic levels. This finding differs from prior research results where the neighbouring country's tourism either suffered from the proximity to warfare or benefited by receiving tourists redirected from the directly involved countries.

In terms of governmental interventions, at least two actions should be mentioned when analysing Polish tourism in 2022. First, impacting the foreign tourist demand, the programme of reimbursing the costs of Ukrainian refugees hosted in accommodation establishments (GOV.PL, 2022) allowed the accommodation providers to recover the costs the refugees could not pay themselves. The local administration cooperated on a large scale with the accommodation providers to successfully manage the massive and unexpected influx of refugees. This flow, although not driven by tourism motives, partially recovered the lost earnings from other European and non-European source countries. Second, impacting the domestic tourist demand, the Kid's Tourist Voucher programme of financing holiday expenses for children (120 euro per child to be redeemed only for domestic tourism; GOV.PL, 2023) encouraged Polish families to spend holidays in Poland. Initially, this programme was introduced on 1st August 2020 and intended to support the Polish tourism industry in the COVID-19 period, but it was later extended until 31st March 2023, thus positively impacting domestic tourism in the analysed period. Both of these governmental programme should be considered when assessing the Polish tourism conditions in 2022.

Based on the results, the following recommendations for tourism strategies in the disaster situation of war in a neighbouring country are relevant to accommodation providers and the government. First, accommodation providers should focus on domestic tourists, who will not be affected by the fundamental motives framework, as their movement within the country will not increase their risk of personal physical harm due to the war. Second, accommodation providers should also seek to attract tourists from other neighbouring countries, for whom the fundamental motives framework will likewise not apply. Due to household budget constraints, these tourists may be willing to switch from distant and expensive locations to regional ones. Third, accommodation providers should cooperate with the authorities in receiving refugees. In addition to the obvious positive impact on society and people's wellbeing, such cooperation could serve as a "survival kit"

for accommodation providers if their expenses are reimbursed by the government, either centrally or locally. Such an opportunistic approach to the search for earnings in a disaster situation can be compared to the efforts to make accommodation available to medical personnel or as quarantine sites during the COVID-19 pandemic (Kiczmachowska, 2022). Fourth, the government should support domestic tourism. In this particular case, the government used leftover COVID-19 pandemic support to boost the tourism industry by encouraging families with children to travel domestically, but any form of domestic tourism co-financing would be a good option to reduce the pressure on household budgets and thus limit the impact of the consumer choice theory. Fifth, the government should promote the country among citizens of other neighbouring countries. Attracting tourists from these countries, where the fundamental motives framework would not apply, may constitute an opportunity to grow the tourism industry. Finally, the government should support accommodation providers in hosting war refugees. As the Polish case shows, in the first days of the war, the willingness to host refugees from Ukraine was extremely high among entrepreneurs and private citizens, long before any support programme was introduced by the government. Supporting those who spontaneously organised and maintained the refugees' reception is in the government's best interest to avoid negative consequences, such as human crises or epidemics.

One limitation of this study is that it covered only the first ten months of the conflict. As the war in Ukraine continues, further research can reveal longer-term effects, especially on the domestic tourism intensity, which in the short term did not follow the negative macroeconomic impacts. Another limitation is that this study focused on inbound and domestic tourist flows. Future research could analyse outbound travel, as tourists may (due to increasing energy costs, fuel costs, and inflation) switch from outbound to domestic travel options, further supporting the domestic tourism industry. Moreover, as this study was limited to Poland only, replicating the analyses in other neighbouring countries would allow for comparison of the results and paint a broader picture of the tourism conditions in the region. Finally, the COVID-19 pandemic preceding the war in Ukraine constitutes another limitation of this study. As it is impossible to fully separate the effects of the two disasters on the Polish tourism industry, at least four factors should be considered when discussing the results. The first is the aforementioned Kid's Tourist Voucher government programme, which positively impacted domestic tourism. The other three effects concern changes in tourists' habits and attitudes caused by the pandemic. One change, with a negative impact, is avoidance of distant travel by remote travellers, which led many other European and non-European tourists to prefer spending holidays in their home countries. The second change, also with a negative impact, is maintaining COVID-19 practices of spending holidays at families' premises, summer houses, or allotment gardens instead of accommodation

establishments. The third change, with a positive impact, is a kind of an abreaction phenomenon leading people to travel more to “make up” for lost travel opportunities during the pandemic. The last phenomenon could partly explain the lack of negative trends in domestic travel, despite budget constraints resulting from increasing costs of living and inflation. As such, the COVID-19 pandemic should be regarded as a confounding factor to the results of this research, which should not be interpreted solely in terms of war-related effects.

Conflict of Interest

The author declares no conflict of interest.

References

- Avraham, E. (2013). Crisis Communication, Image Restoration, and Battling Stereotypes of Terror and Wars: Media Strategies for Attracting Tourism to Middle Eastern Countries. *American Behavioral Scientist*, 57(9), 1350–1367. <https://doi.org/10.1177/0002764213487733>
- Bankier.pl. (2023). *Euro 95 Gasoline Price (Poland)*. Retrieved from: <https://www.bankier.pl/gospodarka/wskazniki-makroekonomiczne/eu-95-pol> (accessed: 9.01.2023).
- Berbekova, A., Uysal, M., & Assaf, A. G. (2021). A Thematic Analysis of Crisis Management in Tourism: A Theoretical Perspective. *Tourism Management*, 86, 104342. <https://doi.org/10.1016/j.tourman.2021.104342>
- Border Guards. (2023). *Statistical Information*. Retrieved from: <https://www.strazgraniczna.pl/pl/granica/statystyki-sg/2206,Statystyki-SG.html> (accessed: 9.01.2023).
- Buigut, S., & Amendah, D. D. (2016). Effect of Terrorism on Demand for Tourism in Kenya. *Tourism Economics*, 22(5), 928–938. <https://doi.org/10.5367/te.2015.0467>
- Buigut, S., Kapar, B., & Braendle, U. (2022). Effect of Regional Terrorism Events on Malaysian Tourism Demand. *Tourism and Hospitality Research*, 22(3), 271–283. <https://doi.org/10.1177/14673584211021895>
- Campbell, M. C., Inman, J. J., Kirmani, A., & Price, L. L. (2020). In Times of Trouble: A Framework for Understanding Consumers’ Responses to Threats. *Journal of Consumer Research*, 47(3), 311–326. <https://doi.org/10.1093/jcr/ucaa036>
- Consilium. (2023). *EU Response to Russia’s War of Aggression against Ukraine*. Retrieved from: <https://www.consilium.europa.eu/pl/policies/eu-response-ukraine-invasion/#sanctions> (accessed: 24.01.2023).
- Devine, J. A. (2016). Politics of Post-war Tourism in Guatemala: Contested Identities, Histories, and Futures. *L’Espace Politique*, 28. <https://doi.org/10.4000/espacepolitique.3723>
- Dissanayake, D., & Samarathunga, W. (2021). Post-war City to a Tourism City: The Perspectives of Local Stakeholders on Post-war City Tourism Development in Jaffna, Sri Lanka. *International Journal of Tourism Cities*, 7(3), 602–621. <https://doi.org/10.1108/IJTC-05-2020-0111>

- FAO. (2022). *World Food and Agriculture – Statistical Yearbook 2022*. Retrieved from: <https://www.fao.org/publications/card/en/c/CC2211EN> (accessed: 3.02.2023).
- Faulkner, B. (2001). Towards a Framework for Tourism Disaster Management. *Tourism Management*, 22(2), 135–147. [https://doi.org/10.1016/S0261-5177\(00\)00048-0](https://doi.org/10.1016/S0261-5177(00)00048-0)
- Fernando, P., & Jayawardena, C. (Chandi). (2013). Focusing on Realistic Tourism Targets for Post-war Sri Lanka. *Worldwide Hospitality & Tourism Themes*, 5(5), 495–504. <https://doi.org/10.1108/WHATT-05-2013-0031>
- Fernando, S., Bandara, J. S., & Smith, C. (2013). Regaining Missed Opportunities: The Role of Tourism in Post-war Development in Sri Lanka. *Asia Pacific Journal of Tourism Research*, 18(7), 685–711. <https://doi.org/10.1080/10941665.2012.695284>
- GDELT. (2023). *The GDELT Project. Intro*. Retrieved from: <https://www.gdeltproject.org/> (accessed: 9.01.2023).
- Gillen, J. (2014). Tourism and Nation Building at the War Remnants Museum in Ho Chi Minh City, Vietnam. *Annals of the Association of American Geographers*, 104(6), 1307–1321. <https://doi.org/10.1080/00045608.2014.944459>
- GOV.PL. (2022). *Środki finansowe dla osób pomagającym obywatelom Ukrainy*. Retrieved from: <https://www.gov.pl/web/mswia/srodki-finansowe-dla-osob-pomagajacym-obywatelom-ukrainy> (accessed: 11.08.2024).
- GOV.PL. (2023). *Polski Bon Turystyczny – dla dziecka*. Retrieved from: <https://www.gov.pl/web/gov/polski-bon-turystyczny---dla-dziecka> (accessed: 11.08.2024).
- Greenlaw, S. A., & Shapiro, D. (2017). How Changes in Income and Prices Affect Consumption Choices. *Principles of Economics 2e*. XanEdu. Retrieved from: <https://openstax.org/books/principles-economics-2e/pages/6-2-how-changes-in-income-and-prices-affect-consumption-choices> (accessed: 2.02.2023).
- Griskevicius, V., & Kenrick, D. T. (2013). Fundamental Motives: How Evolutionary Needs Influence Consumer Behavior. *Journal of Consumer Psychology*, 23(3), 372–386. <https://doi.org/10.1016/j.jcps.2013.03.003>
- Gumbo, B. G. (2014). Southern African Liberation Wars: The Halting Development of Tourism in Botswana, 1960s–1990s. *South African Historical Journal*, 66(3), 572–587. <https://doi.org/10.1080/02582473.2014.902493>
- IEA. (2022). *Russian Supplies to Global Energy Markets*. Retrieved from: <https://www.iea.org/reports/russian-supplies-to-global-energy-markets> (accessed: 3.02.2023).
- Kiczmachowska, E. E. (2022). The Impact of the COVID-19 Pandemic on Peer-to-Peer Accommodation Businesses: The Case of Airbnb. *Journal of Economics and Management*, 44, 286–314. <https://doi.org/10.22367/jem.2022.44.12>
- Madigan, T., & West, B. (2023). Western Tourism at Cu Chi and the Memory of War in Vietnam: Dialogical Effects of the Carnavalesque. *Thesis Eleven*, 174(1), 118–134. <https://doi.org/10.1177/07255136221147954>

- Mihalić, T. (1996). Tourism and Warfare – the Case of Slovenia. In: A. Pizam, Y. Mansfeld (Eds), *Tourism, Crime and International Security Issues* (pp. 231–246). John Wiley and Sons.
- Mirisae, S. M., & Ahmad, Y. (2018). Post-war Tourism as an Urban Reconstruction Strategy Case Study: Khorramshahr. *International Journal of Tourism Cities*, 4(1), 81–97. <https://doi.org/10.1108/IJTC-07-2017-0039>
- Naef, P. (2016). Tourism and the ‘Martyred City’: Memorializing War in the Former Yugoslavia. *Journal of Tourism and Cultural Change*, 14(3), 222–239. <https://doi.org/10.1080/14766825.2016.1169345>
- OECD. (2020). *OECD Tourism Trends and Policies 2020*. OECD Publishing. <https://doi.org/10.1787/6b47b985-en>
- Omer, A. M., & Yeşiltaş, M. (2020). Modeling the Impact of Wars and Terrorism on Tourism Demand in Kurdistan Region of Iraq. *Portuguese Economic Journal*, 19(3), 301–322. <https://doi.org/10.1007/s10258-020-00178-0>
- Osiecki, A. (2022). Wpływ wojny w Ukrainie na gospodarkę. *Rzeczpospolita*, 25 October. Retrieved from: <https://www.rp.pl/wydarzenia-gospodarcze/art37296281-wplyw-wojny-w-ukrainie-na-gospodarke> (accessed: 5.02.2023).
- Perles-Ribes, J. F., Ramón-Rodríguez, A. B., Moreno-Izquierdo, L., & Torregrosa Martí, M. T. (2018). Winners and Losers in the Arab Uprisings: A Mediterranean Tourism Perspective. *Current Issues in Tourism*, 21(16), 1810–1829. <https://doi.org/10.1080/13683500.2016.1225697>
- Rahman, F., Holdschlag, A., Ahmad, B., & Qadir, I. (2011). War, Terror and Tourism: Impact of Violent Events on International Tourism in Chitral, Pakistan. *Tourism*, 59(4), 465–479. Retrieved from: <https://search.ebscohost.com/login.aspx?direct=true&db=edo&AN=70425506&site=eds-live> (accessed: 23.02.2023).
- Ritchie, B. W. (2004). Chaos, Crises and Disasters: A Strategic Approach to Crisis Management in the Tourism Industry. *Tourism Management*, 25(6), 669–683. <https://doi.org/10.1016/j.tourman.2003.09.004>
- Ritchie, B. W. (2008). Tourism Disaster Planning and Management: From Response and Recovery to Reduction and Readiness. *Current Issues in Tourism*, 11(4), 315–348. <https://doi.org/10.1080/13683500802140372>
- Ritchie, B. W., & Jiang, Y. (2019). A Review of Research on Tourism Risk, Crisis and Disaster Management: Launching the Annals of Tourism Research Curated Collection on Tourism Risk, Crisis and Disaster Management. *Annals of Tourism Research*, 79, 102812. <https://doi.org/10.1016/j.annals.2019.102812>
- Sawicki, B. (2022). Ile węgla i skąd Polska importowała w 2022 roku. Rekord niemal pobity. *Rzeczpospolita*, 28 December. Retrieved from: <https://energia.rp.pl/wegiel/art37680201-ile-wegla-i-skad-polska-importowala-w-2022-roku-rekord-niemal-pobity> (accessed: 1.02.2023).

- Selvanathan, S. (2007). The Effect of War and Other Factors on Sri Lankan Tourism. *Applied Economics Letters*, 14(1), 35–38. <https://doi.org/10.1080/13504850500425576>
- Senbeto, D. L. (2022). Crisis and Africa's Tourism Industry: A Comprehensive Review and Agenda for Future Research. *Tourism Management Perspectives*, 43, 100992. <https://doi.org/10.1016/j.tmp.2022.100992>
- Statistics Poland. (2022a). *Poland Macroeconomic Indicators*. Retrieved from: <https://stat.gov.pl/wskazniki-makroekonomiczne/> (accessed: 9.12.2022).
- Statistics Poland. (2022b). *Topics: Tourism*. Retrieved from: <https://stat.gov.pl/obszary-tematyczne/kultura-turystyka-sport/turystyka/> (accessed: 3.08.2024).
- Statistics Poland. (2022c). *Wykorzystanie turystycznej bazy noclegowej w marcu 2022 r. w obliczu napływu uchodźców z Ukrainy i zniesienia obostrzeń związanych z pandemią COVID-19*. Retrieved from: <https://stat.gov.pl/obszary-tematyczne/kultura-turystyka-sport/turystyka/wykorzystanie-turystycznej-bazy-noclegowej-w-marcu-2022-r-w-obliczu-naplywu-uchodzcow-z-ukrainy-i-zniesienia-obostrzen-zwiazanych-z-pandemia-covid-19,17,1.html> (accessed: 9.12.2022).
- Šuligoj, M. (2017). Warfare Tourism: An Opportunity for Croatia? *Economic Research – Ekonomska Istrazivanja*, 30(1), 439–452. <https://doi.org/10.1080/1331677X.2017.1305800>
- Tarlow, P. E. (2015). War, Terrorism, Tourism, and Morality. *International Journal of Safety and Security in Tourism and Hospitality*, 12, 1–13. Retrieved from: <https://search.ebscohost.com/login.aspx?direct=true&db=edb&AN=153424953&site=eds-live> (accessed: 24.01.2023).
- Teye, B. V. (1988). Coup d'Etat and African Tourism: A Study of Ghana. *Annals of Tourism Research*, 15(3), 329–356. [https://doi.org/10.1016/0160-7383\(88\)90026-6](https://doi.org/10.1016/0160-7383(88)90026-6)
- UNWTO. (2022). *Impact of the Russian Offensive in Ukraine on International Tourism*. Retrieved from: <https://www.unwto.org/impact-russian-offensive-in-ukraine-on-tourism> (accessed: 3.02.2023).
- Wut, T. M., Xu, J. B., & Wong, S. (2021). Crisis Management Research (1985–2020) in the Hospitality and Tourism Industry: A Review and Research Agenda. *Tourism Management*, 85, 104307. <https://doi.org/10.1016/j.tourman.2021.104307>

KREM, 2025, 1(1007): 75–86
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18640>

Digitalisation of Public Administration Services as Part of Digital Economy Development in Post-war Ukraine

Mariia Rysin¹, Oleksandr Babych²

¹ Lviv Polytechnic National University, Institute of Public Administration, Governance and Professional Development, Department of Theoretical and Applied Economics, Stepan Bandera Street, 12, 79013 Lviv, Ukraine, e-mail: mariia.v.rysin@lpnu.ua, ORCID: <https://orcid.org/0000-0002-1176-5688>

² Lviv Polytechnic National University, Institute of Public Administration, Governance and Professional Development, Department of Theoretical and Applied Economics, Stepan Bandera Street, 12, 79013 Lviv, Ukraine, e-mail: oleksandr.o.babych@lpnu.ua, ORCID: <https://orcid.org/0009-0004-7599-9282>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Rysin, M., & Babych, O. (2025). Digitalisation of Public Administration Services as Part of Digital Economy Development in Post-war Ukraine. *Krakow Review of Economics and Management/Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 75–86. <https://doi.org/10.15678/krem.18640>

ABSTRACT

Objective: This paper explores the pivotal role of the digitalisation of public administration services as part of the development of the digital economy in post-war Ukraine. It aims to analyse how this factor contributes to rebuilding and modernising the nation's economic and administrative frameworks in the aftermath of conflict.

Research Design & Methods: Utilising a mixed-method approach, the paper combines quantitative data analysis of economic indicators with qualitative case studies of digital initiatives. It critically examines policy documents, economic reports, and interviews with key stakeholders in the Ukrainian digital sector.

Findings: The findings reveal that digitalisation efforts, particularly in public services and the IT sector, have significantly bolstered economic resilience and administrative efficiency for post-war Ukraine. The integration of digital technologies in government services has streamlined processes, improved transparency, and fostered citizen engagement.

Implications/Recommendations: The paper underscores the necessity of continued investment in digital infrastructure and skills development. It recommends policy interventions to further integrate digital solutions into public administration and to support the burgeoning IT sector as a cornerstone of economic growth.

Contribution: This paper contributes to the understanding of digital transformation as a crucial element in post-conflict recovery. It offers a unique perspective on Ukraine's journey toward digitalisation, providing valuable insights for policy makers and scholars interested in the intersection of technology, governance, and post-war reconstruction.

Article type: review article.

Keywords: digital economy, digital transformation, post-war recovery, Ukraine, public administration, digitalisation, post-conflict reconstruction.

JEL Classification: O33, O52, H11, P48.

1. Introduction

The Russian invasion of Ukraine has dealt a severe blow to the country's economy and infrastructure. Despite the ongoing conflict in various regions, the government and civic organisations are working collaboratively to devise a plan for the post-war recovery. The challenge at hand is to effectively allocate resources to facilitate a rapid social and economic revival. In this regard, the importance of developing the digital economy and digitalisation of public administration cannot be disregarded in today's world. By leveraging technology, Ukraine can streamline its operations, enhance efficiency, and ensure transparency in governance, thereby paving the way for a brighter, more prosperous future.

Even before the start of the war with Russia, in July 2019, an expert mission from the European Union began its activities in Ukraine to assess the convergence of regulatory and legal regulation and the institutional capacity of the Ukrainian digital market. An analysis of current national legislation in the field of electronic communications, electronic commerce, radio frequency resources and electronic identification, relevant draft laws that had to be registered in the Verkhovna Rada of Ukraine of the new convocation, and the institutional capacity of the regulator in the field of telecommunications was carried out. The specified components form the technological basis of the Single Digital Market of the EU.

In this era of rapidly advancing digital technologies, it is essential to recognise their significant impact on the economy and governance. The process of digital transformation can bring about greater efficiency in public administration, promote transparency of public services, and stimulate economic growth. This is particularly relevant for Ukraine's post-war recovery process. It is essential to understand how the development of the digital economy and the digitalisation of public adminis-

tration can play a role in this recovery process. However, it is also important to be aware of the primary obstacles and challenges that Ukraine may encounter along the way. By addressing these challenges, the country can better harness the power of digital technologies to achieve its goals.

2. The Purpose and Objectives of the Paper

The purpose of this paper is to conduct a comprehensive analysis of the digitalisation of public administration services in Ukraine, with a particular focus on their role and impact on the country's post-war recovery process. The paper aims to explore how this can facilitate efficiency and transparency in management processes, drive economic growth, and promote social development in the aftermath of the conflict. To achieve this goal, the paper will delve into the fundamental concepts of the development of the digital economy and the digitalisation of public administration, assess the current state of these areas in Ukraine, identify the challenges and difficulties faced by Ukraine, and present recommendations for leveraging digital tools to support the recovery process.

The paper aims to address a series of critical questions, such as how the development of the digital economy and digitalisation can contribute to Ukraine's recovery process, what obstacles may arise, how other countries' experiences can be adapted to Ukraine's context, and what concrete steps and strategies can be implemented to maximise the benefits of digitalisation in the recovery process. By conducting a thorough analysis of these issues, the paper aims to provide insights into the potential for the development of the digital economy and the digitalisation of governance to drive Ukraine's post-war recovery. At the same time, the paper recognises that achieving this potential will require strategic planning, infrastructure improvements, and a commitment to digital innovation and transformation. The expected outcome of the paper is to identify the key opportunities and challenges associated with the development of the digital economy and digitalisation in Ukraine's recovery process and to propose actionable recommendations to leverage these opportunities and overcome the challenges.

3. Concepts of the Digital Economy and Digitalisation of Public Administration

In order to provide a more comprehensive understanding of several key concepts, we would like to offer detailed explanations of the digital economy, digitalisation of public administration, and post-war recovery. The digital economy is a term used to describe the utilisation of digital technologies, such as virtual reality, big data, and artificial intelligence, to create new products and services and modernise traditional industries. The digital economy also involves elements such as digital

infrastructure, digital literacy, e-commerce, digital marketing, online services, and more (Bukht & Heeks, 2017, p. 4). Depending on the context, different aspects might be emphasised. This sector has the potential to revolutionise the way in which production, trade, consumption, and government interact with citizens and businesses. By leveraging the power of digital technologies, businesses can create more value for their customers, increase their competitiveness in the marketplace, and optimise their operations.

According to Semenog (2020), the definition of the digital economy involves the analysis of the activities of digital platforms and the level of development of e-commerce. The analysis of the development of the digital economy should cover three levels, namely the digital sector, the digital economy, and the digitalised economy (Semenog, 2020, p. 38).

The digitalisation of public administration refers to the process of incorporating digital technologies into government systems with the aim of improving efficiency, transparency, and openness in decision-making (Dunleavy *et al.*, 2006, p. 467). This encompasses a wide range of activities, including e-governance, e-democracy, and online citizen interaction with government agencies. By embracing digitalisation, public administration can streamline its processes, reduce costs, and improve the overall quality of services provided to citizens. This can lead to increased trust in government institutions and greater participation by citizens in the democratic process.

In accordance with the Strategy for implementation of digital development, digital transformations, and digitalisation of the state finance management system for the period until 2025, a number of key digital transformations were implemented in the work of the Ministry of Finance, the Treasury, and the State Fiscal Service.

The process of implementing the “LOGICA” information management system for planning and implementing local budgets, which is a tool for planning and implementing budgets and monitoring compliance with budget legislation at each stage of the budget process in relation to local budgets, has begun.

The unified web portal for the use of public funds (spending.gov.ua) and the state budget web portal for citizens of Ukraine (openbudget.gov.ua) has been created to publish information on the expenditures of managers and recipients of budget funds and to inform the public about budget planning and implementation.

In order to increase the efficiency of state financial control and analysis of information on the expenditure of budget funds by controlled institutions, the State Audit Service was granted expanded access to the services of the unified web portal for the use of public funds in 2020.

Thus, the digitalisation of public administration will use cloud computing technology, which will provide on-demand remote access to cloud infrastructure through electronic communication networks. At the same time, cloud infra-

structure is created as a set of dynamically distributed and configurable cloud resources that can be quickly provided to the user of cloud services and released through global and local data transmission networks (Strategy for implementation of digital development..., 2021).

In our article, we focus on the post-war recovery of Ukraine's economic development. Therefore, we mean post-war recovery is a complex and multifaceted process that involves rebuilding a country after war or military conflict. This process typically encompasses a range of activities, including rebuilding physical and social infrastructure, economic recovery, restoring political institutions and governance systems, and supporting the peace process. It is a critical component of transitioning from conflict to peace and stability. The success of post-war recovery efforts depends on a range of factors, including political will, access to resources, and the involvement of local communities and stakeholders (Volynski, 2023). By working together to support post-war recovery efforts, countries can create a more stable and prosperous future for their citizens.

4. Analysis of the Digital Economy Development and Digitalisation of Public Administration in Ukraine

Digital Economy in Ukraine

As of 2023, Ukraine remains one of the key players in Europe's IT landscape. The Ukrainian IT sector makes up about 4% of the country's GDP, making it a significant driver of economic growth. It is worth noting that the growth of Ukraine's digital economy is fueled not only by a strong software sector but also by hardware development and digital services.

Ukraine boasts a large pool of IT professionals, with over 200,000 specialists as of 2023. These professionals are instrumental in supporting the country's digital economy by offering high-quality services to both domestic and international markets. The Ukrainian IT industry is characterised by a highly skilled workforce with expertise in various areas, including, but not limited to, data science, artificial intelligence, cybersecurity, and software development (Shpak *et al.*, 2023, p. 14).

The growth of the digital economy is further facilitated by Ukraine's advanced Internet infrastructure, which reaches about 80% of the population. Broadband Internet access, which is crucial for various digital services, is also well-distributed across the country.

Moreover, the development of e-commerce has played a pivotal role in the digital economy of Ukraine. The e-commerce market reached \$6 billion in 2023, a notable increase from the previous years. Key drivers behind this growth include increased smartphone penetration, improved payment systems, and the growing trust of consumers in online shopping.

Digitalisation of Public Administration in Ukraine

The Ukrainian government has made significant strides in digitising public services as part of its commitment to improve governance and increase efficiency. In 2020, the national project “Diia” was launched, providing an all-encompassing platform for a variety of government e-services (see Table 1). By 2023, Diia has over 15 million registered users and offers more than 50 electronic services, including digital passports, driver’s licences, and various permits.

Table 1. Advantages of Electronic Services of the Digital Portal “Diia”

Benefits	Implementation Results
Providing access to information	The Diia portal provides citizens with wide access to various information about the activities of state bodies. This allows citizens to be educated and informed about decision-making processes and influences them based on objective information
Electronic petitions and appeals of citizens	The service of electronic petitions and appeals on the Diia portal gives citizens the opportunity to express their views, proposals, and demands on various issues. This creates an opportunity for public discussion and influence on decision-making processes
Public consultations	The Diia portal involves the public in the process of developing and discussing various regulatory acts and strategies. Public consultations provide an opportunity for the public to express their opinions, comments, and suggestions, which can be taken into account when making decisions
Interaction with state bodies	The Diia portal creates a platform for interaction between citizens and state bodies. This allows citizens to directly contact authorities, receive answers to their questions and participate in decision-making processes

Source: the authors.

Furthermore, Diia has been well-received by citizens, who appreciate the increased convenience and efficiency it offers. The application has reduced the need for physical documents and streamlined public services, making interactions with the government more seamless.

The most widespread systems of electronic document circulation in the executive authorities of Ukraine are: Megapolis. Document flow (developer – Softline), ASKOD (developer – InfoPlus), OPTIMA WorkFlow (developer – Optima), Doc Prof (developer – Sitronics), MasterDOC (developer – Bankomzviazok).

For example, the ASKOD electronic document management system has been used for a long time in the administration of the president of Ukraine, the NBU (in the process of implementing a new version of ASKOD), the Ministry of Defense of Ukraine, and the General Staff of the Armed Forces of Ukraine (in the process of implementation), Raiffeisen Bank Aval JSC and other organisations.

The ASKOD system interface allows remote and mobile administrators to access the central database to perform all necessary steps in the workflows, including

maintaining their own local workflow, according to the granted rights and authorities. Users can access the ASKOD system through Web access using various browsers: Mozilla Firefox, Google Chrome, Internet Explorer, Safari, and Opera (Educational and Scientific Institute of Public Service and Management, 2019).

In addition, the government has implemented the “State in a Smartphone” strategy, which aims to digitise 100% of public services by 2024. This ambitious initiative reflects Ukraine’s commitment to digital transformation and its goal of establishing a comprehensive, user-friendly e-governance system.

These efforts in the digitalisation of public administration have not only made government services more accessible and efficient but also significantly improved Ukraine’s international standing in e-governance and digital society indices. The successful implementation of these strategies demonstrates Ukraine’s position as a leader in digital governance among European nations.

The Digital Economy and Digitalisation in Post-war Recovery

The digital economy and digitalisation can significantly influence post-war recovery processes, providing crucial tools and mechanisms for rebuilding infrastructure, revitalising economies, and strengthening societal cohesion. Here are some expanded key aspects:

1. **Economic revival:** Post-war periods often require rapid economic recovery and job creation. The digital economy can stimulate this recovery by creating a fertile environment for innovation and entrepreneurship. By reducing entry costs and expanding access to global markets through e-commerce, digital technologies can foster the development of small and medium-sized businesses. Additionally, the IT sector’s rapid growth may create an abundance of job opportunities. According to the European Commission, each job in the high-tech sector can create additional five jobs in other sectors.

2. **Infrastructure recovery:** Digitalisation can expedite the restoration of physical infrastructure. With tools like geographic information systems (GIS), remote sensing, and big data analytics, authorities can efficiently assess damages, plan restoration efforts, and manage resources. As per a study by the UNDP, geospatial technologies can reduce recovery costs by up to 20%.

3. **Support for public services:** Digitalisation can ensure the continuity and efficiency of public services, even in remote regions or those heavily affected by war. E-governance can maintain administrative functions, while digital health and education services can ensure that essential social services remain accessible. According to the World Bank, digital health interventions can increase the health system’s service capacity by up to 60%.

4. **Aid and resource management:** Digital technologies can bring transparency and accountability to the distribution of post-war aid. Blockchain technology, for

instance, can trace aid resources, reducing corruption and increasing efficiency. A study by USAID found that digital cash transfers can reduce overhead costs by up to 90% compared to traditional aid distribution methods.

5. Supporting social cohesion: Digital platforms can promote dialogue, information sharing, and mutual understanding, which are critical for social cohesion and peacebuilding after a conflict. Social media platforms and online community forums can be utilised for these purposes. As per a report by the UN Peacebuilding Support Office, digital communication technologies can increase the effectiveness of peacebuilding efforts by up to 30%.

While the potential of the digital economy and digitalisation is substantial, their successful application requires an appropriate digital infrastructure, a skilled workforce, and a supportive regulatory environment. Furthermore, the integration of digital strategies must be aligned with broader recovery strategies, taking into account local context, needs, and capacities. Digital inequality, cybersecurity, and data privacy are among the challenges that need to be addressed to ensure that the benefits of digitalisation are equitably distributed and effectively leveraged for post-war recovery.

5. The Potential of the Digital Economy for Post-war Modernisation

The resilience and success of Ukraine's digital sector both before and during the war underscore its potential to significantly contribute to the modernisation of all sectors in the country's post-war recovery. This strength, coupled with a focused strategy on digital transformation (see Table 2), could substantially increase Ukraine's GDP and provide stability to its post-war economy.

As of 2023, the Ukrainian digital sector already accounted for about 4% of the nation's GDP. Given its growth rate, expansion to a 10% share of GDP in the post-war period is a plausible target (Motkin, 2023). Achieving this would not only boost Ukraine's economy but also spur job creation, entrepreneurship, and innovation across various sectors.

Table 2. Ukrainian Government's Digital Targets for 2025

Specification
IT's share of Ukraine's GDP reaches 10%
100% ^a of electronic public services are implemented according to plan
100% ^a of critical information infrastructure facilities are covered by sensors
30% of state information resources are transferred to the cloud
95% ^a of the population has access to high-speed Internet

^aTaking into account the circumstances of the war, the targets may be adjusted by the government.

Source: National Council for the Recovery of Ukraine from the Consequences of the War (2022).

The strength of Ukraine's digital sector is being recognised internationally. As an example, Estonia, a global leader in digital governance, is planning to pilot a national mobile application based on Ukraine's Diia app. This signifies the successful adaptation and export of Ukrainian digital solutions, underscoring the country's digital prowess and its potential to contribute to the global digital landscape.

Digitisation as a Tool for Accountability, Transparency, and Modernisation

The role of digitisation extends beyond direct economic impact. It can also be a powerful tool for ensuring accountability and transparency in the reconstruction process. By tracking resources and reconstruction efforts, digital tools can help minimise corruption, misallocation of resources, and inefficiency. In addition, they can promote citizen participation and engagement in governance processes, further bolstering transparency and accountability.

Moreover, digitisation can catalyse modernisation in various sectors, including healthcare, education, and public services, which are critical for post-war recovery. For instance, the adoption of telemedicine, e-learning platforms, and digital social services can improve service delivery and accessibility, significantly enhancing the quality of life and social cohesion in the post-war period.

As Ukraine works towards its post-war recovery, it is important to continue promoting digital skills and infrastructure development, ensuring inclusive access, and addressing cybersecurity risks. Doing so will ensure that the benefits of digital transformation are widespread and sustainable, thereby solidifying the role of the digital sector as a cornerstone of Ukraine's resilient post-war economy.

In order to develop solutions for the post-war recovery of Ukraine's economy, the key issue for research is finding strategies and practices that can be useful to accelerate the digitalisation process. Accelerating the digitalisation process requires a strategic approach that covers not only technical aspects but also organisational, cultural, legal, and political factors (OECD, 2022). Here are some recommendations for implementing digitalisation strategies and practices:

- Create an overall digital strategy: It is important to have a clearly defined vision and strategy for digitalisation that encompasses all levels of government. This strategy should focus on implementing digital solutions that respond to the needs of citizens and improve the efficiency of services;
- Providing skills and training: Digitalisation requires management and staff to have appropriate skills to use new technologies and tools. Education and training programmes that focus on digital literacy skills can contribute to the successful implementation of digital initiatives (Grazhevska & Chyhyrskyi, 2022);
- Update legislation and regulatory frameworks: Digital technologies often go beyond existing legal frameworks, so it is important to update the regulatory framework to meet new challenges and opportunities;

- Cooperation with the private sector: The private sector can be an important partner in the digitalisation process by providing technology, expertise, and resources;

- Data and privacy protection: With the growing use of digital technologies, it is important to ensure that users' personal data and privacy are protected;

- Inclusiveness and accessibility: When introducing digital technologies, it is necessary to ensure that all citizens have access to digital services, regardless of their socioeconomic situation, education, age, or place of residence.

These recommendations provide a solid foundation for a digitalisation strategy that can adapt to constantly changing conditions and opportunities.

6. Conclusions

The assessment of the impact of further development of the digital economy and digitalisation on Ukraine's post-war recovery allowed us to generalise the main results of the paper.

The digital economy is an important tool for post-war recovery. The transition to a digital economy can stimulate economic development by creating new jobs, increasing productivity, and fostering innovation. At the same time, digital technologies can help address some of the key challenges of post-war recovery, such as rebuilding infrastructure, providing social services, and reforming governance processes.

The digitalisation of public administration is the main driver of reforms because the introduction of digital technologies in public administration can make management processes more efficient, transparent, and responsive. Digitalisation can also help create a more open government that responds to the needs of citizens and supports active civic participation.

The need for a comprehensive approach to digitalisation determined that successful digitalisation includes strategic planning, staff training, legislative updates, cooperation with the private sector, data protection, inclusiveness, and accessibility.

As part of the implementation of the Association Agreement between Ukraine, on the one hand, and the European Union and European Atomic Energy Community, on the other, Ukraine must ensure the comprehensive development of electronic government in accordance with European requirements. Electronic government is also a necessary condition for the creation of an effective digital economy and digital market in Ukraine with its further integration into the European strategy of a single digital market for Europe.

Overall, the digital economy and digitalisation can play a key role in Ukraine's post-war recovery, contributing to economic development, public sector reform, and improving the living standards of citizens. However, in order to achieve these goals,

a wide range of factors need to be taken into account, and the interaction of all stakeholders needs to be ensured.

The analysis of the digital economy and digitalisation in Ukraine's post-war recovery is a highly relevant and promising field. Nevertheless, there are still some areas that require more in-depth exploration. For instance, how do the digital economy and digitalisation impact specific sectors such as education, healthcare, energy, agriculture, and others? Which sectors will benefit the most from digital transformation, and which will face significant challenges? Additionally, it is worthwhile investigating how digital transformation affects the social sphere, including employment, inequality, access to education, and social services.

Furthermore, it is critical to examine how different regions of Ukraine are adapting to the digital economy. What are the regional differences in digital transformation, and how can they be minimised? Lastly, it is imperative to assess how well Ukraine adapts to digital transformation compared to other countries, particularly those undergoing a recovery.

These and other questions can serve as a basis for further research aimed at gaining a better understanding of the impact of the digital economy on Ukraine's postwar recovery and socioeconomic development.

Authors' Contribution

The authors' individual contribution is as follows: Each contributed 50%.

Conflict of Interest

The authors declare no conflict of interest.

References

- Bukht, R., & Heeks, R. (2017). *Defining, Conceptualising and Measuring the Digital Economy* (Development Informatics Working Paper No. 68). Centre for Development Informatics. Global Development Institute, SEED. <https://doi.org/10.2139/ssrn.3431732>
- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New Public Management Is Dead – Long Live Digital-era Governance. *Journal of Public Administration Research and Theory*, 16(3), 467–494. <https://doi.org/10.1093/jopart/mui057>
- Educational and Scientific Institute of Public Service and Management. (2019). *Electronic Document Management ASKOD*. Odessa Polytechnic National University. Retrieved from: <https://www.oridu.odessa.ua/?fil=news%2F2019%2F09%2F04%2F001> (accessed: 30.09.2023).
- Grazhevskaya, N., & Chyhyrnskyi, A. (2022). Development of Entrepreneurial Digital Ecosystems as a Factor in the Post-war Recovery of Ukraine's Economy. *Bulletin of Taras Shevchenko National University of Kyiv. Economics*, 2(219), 17–24. <https://doi.org/10.17721/1728-2667.2022/219-2/3>

- Motkin, A. (2023). *Post-war Ukraine Needs a Smart Digital Transformation Strategy*. Atlantic Council. Retrieved from: <https://www.atlanticcouncil.org/blogs/ukrainealert/post-war-ukraine-needs-a-smart-digital-transformation-strategy/> (accessed: 1.12.2023).
- National Council for the Recovery of Ukraine from the Consequences of the War. (2022). *Draft Ukraine Recovery Plan*. Retrieved from: https://uploads-ssl.webflow.com/621f88db25fbf24758792dd8/62dadb0f931ea6867feb01cf_Digitalization.pdf (accessed: 2.10.2023).
- OECD. (2022). *Digitalisation for Recovery in Ukraine*. Retrieved from: <https://www.oecd.org/ukraine-hub/policy-responses/digitalisation-for-recovery-in-ukraine-c5477864/> (accessed: 20.11.2023).
- Semenog, A. (2020). Analysis of Global Ratings of the Formation and Development of the Digital Economy and Ukraine's Place in Them. *Scientific Bulletin of the International Humanitarian University*, 43, 38–43. <https://doi.org/10.32841/2413-2675/2020-43-6>
- Shpak, N., Karpyak, A., Rybytska, O., Gvozd, M., & Sroka, W. (2023). Assessing the Business Models of Ukrainian IT Companies. *Forum Scientiae Oeconomia*, 11(1), 13–48. https://doi.org/10.23762/FSO_VOL11_NO1_2
- Strategy for implementation of digital development, digital transformations and digitalization of the state finance management system for the period until 2025. Approved by the Resolution of the CMU of November 17, 2021, no. 1467-p. Retrieved from: <https://zakon.rada.gov.ua/laws/show/1467-2021-%D1%80#Text> (accessed: 20.11.2023).
- Volynski, M. (2023). *The Road to Recovery: Ukraine's Economic Challenges and Opportunities*. Center for Strategic & International Studies. Retrieved from: <https://www.csis.org/blogs/development-dispatch/road-recovery-ukraines-economic-challenges-and-opportunities> (accessed: 15.12.2023).

KREM, 2025, 1(1007): 87–103

ISSN 1898-6447

e-ISSN 2545-3238

<https://doi.org/10.15678/krem.17683>

Empowerment in Business: The Current State of Knowledge and Future Directions of Research

Marcin Marchwiany¹, Justyna Bugaj²

¹ Krakow University of Economics, College of Management and Quality Sciences, Rakowicka 27, 31-510 Kraków, Poland, e-mail: marcin.marchwiany@op.pl, ORCID: <https://orcid.org/0009-0000-2192-1085>

² Krakow University of Economics, College of Management and Quality Sciences, Department of Strategic Analysis, Rakowicka 27, 31-510 Kraków, Poland, e-mail: bugajj@uek.krakow.pl, ORCID: <https://orcid.org/0000-0002-0652-4134>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Marchwiany, M., & Bugaj, J. (2025). Empowerment in Business: The Current State of Knowledge and Future Directions of Research. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 87–103. <https://doi.org/10.15678/krem.17683>

ABSTRACT

Objective: The main aim of the article was to identify the current directions of research and the current state of knowledge on empowerment in business, as well as to define potential future directions of research on empowerment which have been indicated by research.

Research Design & Methods: Systematic literature review of publications from the period 2014–2022; 29 full-text publications from the Scopus database were analysed.

Findings: Previous research on empowerment in business has been compiled and organised based on the conducted literature review. The relationships between empowerment and the results of its implementation, together with the intermediary and moderating mechanisms have been presented. The authors collectively depicted future potential directions of research on empowerment put forward by researchers.

Implications/Recommendations: The arrangement of the current research directions on empowerment allows the authors to understand its diversity and complexity. The research results also confirmed many directions in which empowerment is beneficial from the human

resource management point of view. The analysis sheds light on future directions for research of empowerment. It paves the way for a new pathway for future work.

Contribution: Arranging current research directions on empowerment in business and their outcomes from the perspective of management and quality science. Organising and presenting in a collective way the current state of knowledge on empowerment.

Article type: original article.

Keywords: empowerment, empowerment in business, systematic literature review, future empowerment research.

JEL Classification: J24, M12.

1. Introduction

Human resources have been recognised as an essential factor for the survival of firms, making it important for companies to ensure employees are engaged properly for higher productivity, which is essential to support organisational performance and growth (Arefin *et al.*, 2018).

A particularly important area of human activity is the industry in which simple and monotonous processes are being automated, while other processes become more complex and intertwined (Hecklau *et al.*, 2016). For this reason, organisations need human resources committed to their duties, taking up challenges, solving problems, as well as making prompt decisions (Permana *et al.*, 2015).

Empowerment gives a person freedom and control over their environment (Lassoued, Awad & Guirat, 2020) and improves an organisation's ability to enhance, develop, and utilise their talents (Abualoush *et al.*, 2018). Empowered employees are engaged with their work (Sun & Bunchapattanasakda, 2019).

The main purpose of this study is to find the answers to the following research questions:

1. What directions of research on empowerment have been carried out so far in industry?

2. What were the results of the research carried out and what directions for future research on empowerment in industry are recommended by researchers?

The uniqueness and importance of this research lie in the contribution to the development of management science, in the juxtaposition of the research on empowerment in industry carried out so far, and in the indication of future potential directions of research on empowerment in the industrial sector, the results of which may contribute to the development of management science.

2. Research Method

To find answers to the research questions, the methodology of a systematic literature review was used. Systematic literature review is defined as a systematic process of identification, evaluation, and interpretation of existing literature. The review procedure was carried out in four phases (Czakon, 2011). Figure 1 depicts these stages in chronological order.

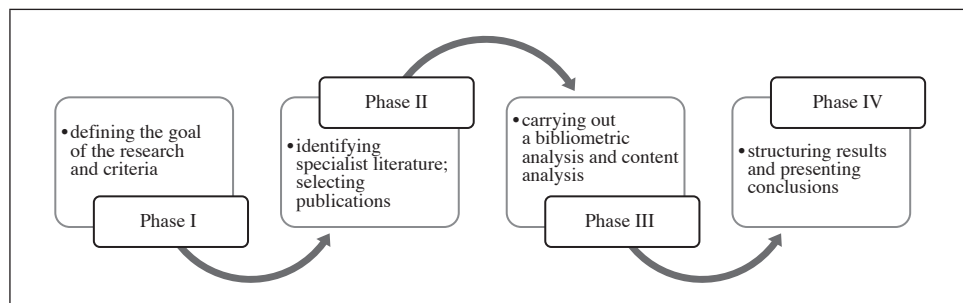


Fig. 1. Procedure of a Systematic Literature Review

Source: the authors, based on Czakon (2013, p. 124).

The purpose of the first stage of the conducted analysis is to define the objectives of the research. Our main research objectives included: 1) determining directions of research on empowerment and selecting research samples and 2) identifying the results of the research carried out and directions for future research on empowerment in industry recommended by researchers.

In the second phase, we adopted several criteria, which we believe are sufficient to identify specialist literature and select publications for further consideration. The criteria adopted are listed in Figure 2.

The Scopus database was used as a data source as we believe it provides a sufficient source of literature resources for our research. Moreover, Scopus is one of the most comprehensive databases of journals in social sciences. Due to our research interests, we applied our research to open-access texts. We conducted our search through Scopus using “empowerment” as the search word.

In the third stage, the aim was to carry out a bibliometric analysis and an analysis of the content of the articles. Selected articles were analysed in two categories: the definition of empowerment and the method of researching empowerment. The fourth phase led us to the results and the presentation of the conclusions. Figure 3 presents a flow chart visualising the selection process for articles to be included in this review.

The search was conducted over the period between 2014 and 2022, yielding 548 literature items. Our choice of starting date, 2014, coincided with the publication of Frederic Laloux’s (2014) book *Reinventing Organisations*, which outlines a vision for a new organisational model that seemed to be emerging, heralding a spiritual revolution in the workplace.

Adopted criteria	articles written in English
	articles located in the Scopus digital database in three categories: Business, Management and Accounting
	articles published in the time period 2014–2022
	articles containing the keyword “empowerment”
	articles published based on empirical work
	articles in open-access indexed Scopus journals
	articles covering research in industry

Fig. 2. Criteria Adopted to Identify and Select Literature
Source: the authors.

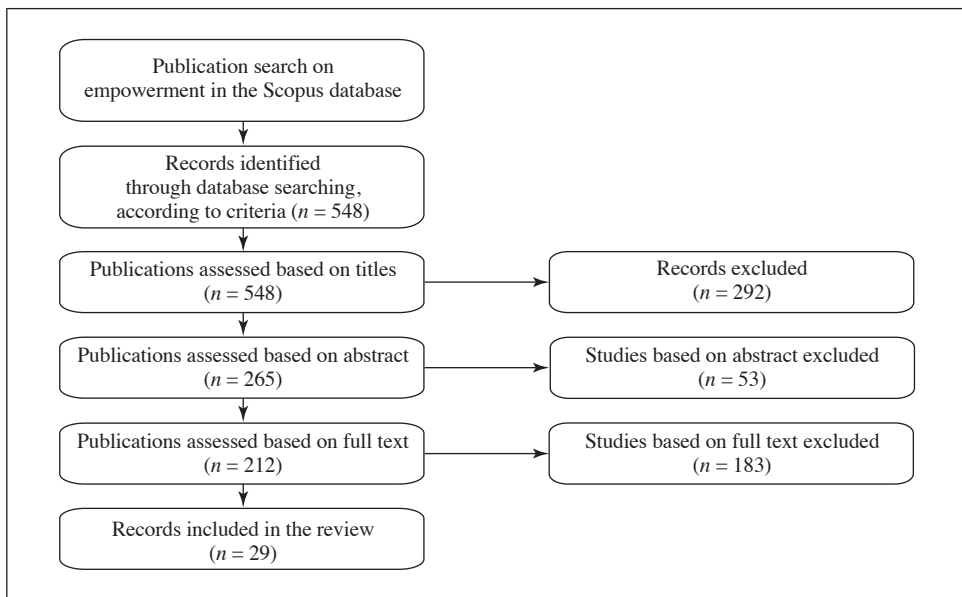


Fig. 3. Selection Process for the Articles under Analysis
Source: the authors.

In 2014, the number of publications reached 37. In 2015, the number of articles decreased to 25. In 2016 and 2017, the number of publications on empowerment increased to 43 and 65 publications, respectively. However, there was a slight decrease to 63 items in 2018. Then, over the next three years, we saw a gradual increase in the number of publications from 71 in 2019 to 87 in 2021. In 2022 the number fell to 82.

Next, we refined the sample of 548 articles by setting the boundaries for the literature review. First, we included articles that were open-access publications. We refined the sample of articles by reading the abstract, titles, and keywords of all the articles. If the abstract confirmed relevance to the review, we reviewed the full-text articles in open access. We decided to include full-text articles exploring the characteristics of employee empowerment. After an initial assessment of titles, 292 articles were rejected. This brought the total number down to 265. In the next stage, we undertook to evaluate the articles based on abstracts. At this stage, we rejected 53 items, which further reduced the area of consideration to 212 texts. In the last stage of selection, based on the analysis of full-text articles, we eliminated 183 items. This stage led us to select 29 articles for in-depth analysis (all listed in the references). The final selection rejected: conceptual texts that did not present the results of their research, were published in a language other than English and to which access was limited. In phase III, which involved in-depth analysis, two categories were analysed: the scope of conducted research and indicated directions of future research.

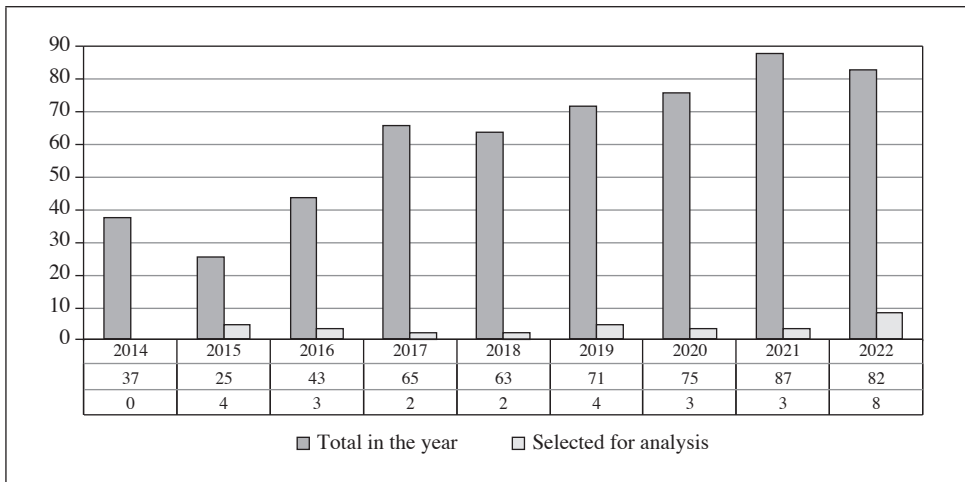


Fig. 4. Number of Publications on Empowerment by Year and Number of Publications Selected for Analysis

Source: the authors, based on research results.

Finally, we focused on discussing the implications of our study and directions for future research. Figure 4 shows the distribution of the number of publications containing the keyword “empowerment” in the title, abstract, or keywords, published in the period 2015–2022, and the number of publications selected for analysis from particular years under consideration. No text published in 2014 was selected for further analysis.

3. Analysis

3.1. Literature Review

Ángeles López-Cabarcos, Vázquez-Rodríguez and Quiñoá-Piñeiro (2022) conducted research to examine how the combined effects of five different antecedents related to the work environment (task significance, social support from co-workers and supervisors) and leadership behaviours (transformational leadership and empowerment) lead to the presence of employee job performance in industry in Galicia, Spain. The results revealed that the most important variables are transformational leadership and social support. Employee empowerment and task significance seem to play a secondary role in leading to improved employee job performance.

Analysis of the impact of psychological empowerment and technology as predictors of safety in mining companies in Ecuador also was examined (Ochoa Pacheco, Cunha & Abrantes, 2022). The results indicated high levels of empowerment on safety behaviour and medium levels of technology’s promotion and prevention factors.

The Chilean textile industry was examined to determine the mediating role of work engagement in the relationship between psychological empowerment and task performance and to explore the moderating role of age in this relationship (Juyumaya, 2022). The results indicate that psychological empowerment increases work engagement, which in turn leads to higher task performance by the employees. Additionally, an employee’s age moderates the mediation effect of work engagement in the studied relationship, especially for young workers. Similar results stating that employee empowerment results in both intellectual and affective engagement were obtained from research on industry in Ghana (Nwachukwu *et al.*, 2021).

Another study was carried out to attempt to highlight the concept of employee-based brand equity (EBBE) and try to shed further light on the importance of EBBE for organisations in the manufacturing industry in Pakistan (Li, 2022). This study proposed that psychological attachment, internal communication, and employee-organisation fit are the three determinants of EBBE. The results of the above-mentioned studies showed that physical attachment, internal communication,

and employee-organisation fit enable a positive change in employee attitudes and contribute to the promotion of employee brand equity.

Kumar, Liu and Jin (2022) examined the boundary effect of perceived organisational support on employee empowerment to sustain the taking charge behaviour of employees Chinese industry. As a result, employee empowerment demonstrated a positive relationship with taking charge behaviour under the boundary condition of perceived organisational support but under low perceived organisational support. Moreover, employee empowerment, accelerated by perceptions of low organisational support, demonstrates a positive impact on the development of taking charge behaviour.

An investigation into how empowering leadership through psychological empowerment encourages employee empowerment was conducted by Khatoon *et al.* (2024). This study further explored the moderating role of learning goal orientation between psychological empowerment and knowledge-sharing behaviour in the manufacturing industry in Pakistan. The results showed that empowering leadership helps modify employees' knowledge-sharing behaviour both directly and indirectly in the presence of psychological empowerment.

In their work, Özbağ and Çekmecelioğlu (2022) analysed the mutual relationships between an empowerment climate, psychological empowerment, corporate reputation, and firm performance in the Turkish manufacturing industry. There is a positive impact of an empowerment climate on psychological empowerment and empowerment climate appears to be a variable that strongly increases both corporate reputation and company performance. Similar results were obtained in the manufacturing sector in India (Jena, Bhattacharyya & Pradhan, 2019). The findings of this study confirmed a significant moderating role of perceived flexibility in the association between meaningful work and psychological empowerment. Moreover, the process of empowerment takes place in an atmosphere of trust and open communication between management and employees.

Employees' strengths can reduce turnover, increase productivity, and improve job satisfaction. This thesis was emphasised by Hajizadeh, Makvandi and Amirnejad (2022). Their study investigated the effective coaching factors in operational managers of the Persian Gulf Petrochemical Company in the motivation of human resources. The results showed that there are a wide range of factors contributing to employee motivation. The authors include empowerment among several indicated factors.

Ekowati *et al.* (2021) studied the relationship between empowerment toward organisational performance, to determine the role of information and communication technology as a mediator of empowerment toward organisational performance in the Drinking Water Company in Indonesia. Their research results emphasise that empowerment has a direct effect on employee performance. In addition, information

and communication technology mediate the effect of empowerment on employee performance.

The Pakistani textile industry was examined to define and investigate the mediating effect of psychological empowerment in the relationship between transformational leadership and two employee outcomes: organisational citizenship behaviour and turnover intention (Saira, Mansoor & Ali, 2021). It was established that empowerment mediates the relationship between transformational leadership and both employee outcomes of organisational citizenship behaviour and turnover intention.

The relationship and the effect of employee empowerment on continuance commitment in Nigerian industry was studied by Okolie and Ochei (2020). There is a significant relationship between employee empowerment and continuance commitment. Additionally, employee empowerment exerts a positive and statistically significant effect on continuance commitment. Findings are similar to the results of Okechukwu, Nnamani and Jude (2015). They examined employee empowerment and teamwork in the management of change in selected Nigerian manufacturing organisations. Moreover, their results revealed that the technique for the empowerment of teams includes changing management roles from supervisory to coaching, delegation, and setting realisable goals. By allowing employees to suggest and implement procedural changes that make their work more efficient companies benefit from savings.

Obi, Leggett and Harris (2020) investigated empowerment approaches and advanced manufacturing technology utilisation in Nigeria and New Zealand. The observed differences in advanced manufacturing technology – empowerment interface are attributable to different national values. Furthermore, during advanced manufacturing technology adoption, New Zealand's liberal culture encourages managers to empower employees more than Nigerian authoritarian culture does. Similarly, Fatahi-Bayat, Goudarzi and Goudarzi (2016) investigate the variables affecting employee empowerment in Iranian industry. Personal, structural, managerial, and environmental factors, in that order, have a maximum correlation with employee empowerment.

Research by Baird, Tung and Su (2020) explored the mediating role of the quality of performance appraisal systems, rated using four quality measurements, which are: trust, clarity, communication, and fairness, on the connection between the level of employee empowerment and their performance, measured against the background of their departments' results. While employee empowerment is positively associated with all four dimensions of the quality of the performance appraisal system, one specific dimension: trust, is found to mediate the effect of employee empowerment on both financial and non-financial business unit performance.

Dedahanov, Bozorov and Sung (2019) have studied the impact of empowerment on the relationship between paternalistic leadership styles, namely: benevolent, moral, and authoritarian and employee innovative behaviour. To achieve the assumed goals, a survey was designed, which covered 390 employees from the manufacturing sector in the Republic of Korea. Based on the results, empowerment was identified as a mediating factor between moral and authoritative leadership styles and innovative behaviour. At the same time, the authors showed that behaviour is not a mediating factor between the servant leadership style and the behaviour of innovative employees.

Fatahi-Bayat, Goudarzi and Goudarzi (2016) also reported that employee empowerment is the managers' key attempt at innovation, decentralisation, and reduction of bureaucracy in organisations. Participants in the cement industry in India were examined to determine the impact of team building and employee empowerment on employee competencies and to test the moderating role of organisational learning culture between these relationships (Potnuru, Sahoo & Sharma, 2019).

Tukiman Hendrawijaya (2019) analysed the influence of demographic factors (age, gender, education, years of service, and the number of family dependents) on employee empowerment both directly and indirectly through employee performance in the cigar industry in Indonesia. The findings stated that age, sex, education, years of service, and number of family dependents have a significant positive effect on employee performance and employee empowerment. Employee performance mediates the effect of age, sex, education, years of service, and number of family dependents on employee empowerment.

Alias *et al.* (2018) undertook research to determine the impact of payment, recognition, empowerment, and work-life balance on job satisfaction in the oil and gas industry in Malaysia. All examined variables significantly influenced job satisfaction. A very strong relationship between empowerment and job satisfaction has been demonstrated. This is achieved by implementing a culture of empowerment at all levels of the organisation, in which management staff trusts subordinates and grants them certain rights related to the need to solve various types of problems.

In another study, the cement industry in Upper Egypt was selected to examine the relationship between perceived empowering leadership behaviour and work engagement (Rayan, Sabaie & Ahmed, 2018) as well as the mediating role of psychological empowerment in the aforementioned relations. The results did not support the direct relationship between leadership-empowered behaviour and work engagement. However, psychological empowerment was found to be mediating the relationship between the two variables.

The effect of transformational leadership and organisational support on employee empowerment was investigated in the Turkish industry by Yildirim and

Naktiyok (2017). The authors claim that transformational leadership and organisational support have positive effects on employee empowerment. Although organisational support plays a mediator role in the relationship between transformational leadership and employee empowerment, this role is not significant.

Rhee *et al.* (2017) studied the mediating role of empowerment in the associations among centralisation, formalisation, and employee innovative behaviour in the manufacturing industry in the Republic of Korea. The findings demonstrated that both centralisation and formalisation were negatively related to empowerment. Empowerment was positively associated with employee innovative behaviour and played a mediating role among centralisation, formalisation, and innovative behaviour.

In another study (Yusoff *et al.*, 2016), Malaysian industry was surveyed to determine the relationship between employee empowerment and sustainable manufacturing performance. The results of the study highlighted that providing empowerment to employees can affect social, environmental, and economic performance.

The IT industry in India was studied to determine the relationship between employee empowerment and job satisfaction as well as the influence of demographic factors on empowerment and job satisfaction (Rana & Singh, 2016). A strong relationship between empowerment and job satisfaction has been demonstrated. The results also confirm a significant difference in empowerment and job satisfaction based on demographic factors: gender, age, marital status, education, position, income, and experience. Among all demographic variables, age, education, and experience had a significant impact on the sense of empowerment. The remaining variables turned out to have no significant impact on the examined relationships.

Nel, Stander and Latif (2015) surveyed 322 employees from the chemical industry in South Africa to discover whether there is a relationship between leadership behaviours and predicting psychological empowerment, work commitment, and life satisfaction. It was also considered whether psychological empowerment conditioned by leadership behaviour can indirectly affect employees' commitment to work and life satisfaction. The results showed significant relationships between leadership behaviours and the considered variables. It was further stated that positive leadership through psychological empowerment determines commitment to work and satisfaction with life.

Permana *et al.* (2015) developed employee excellence through the constructs of the three factors to which they belong: engagement, enablement, and empowerment in the Indonesian industry. The research showed that employees felt empowered when their superiors were willing to delegate responsibilities. The clarity of roles and responsibilities was much higher among functional employees. The research results highlighted the need for superiors to make greater efforts to extend the roles and responsibilities of subordinates.

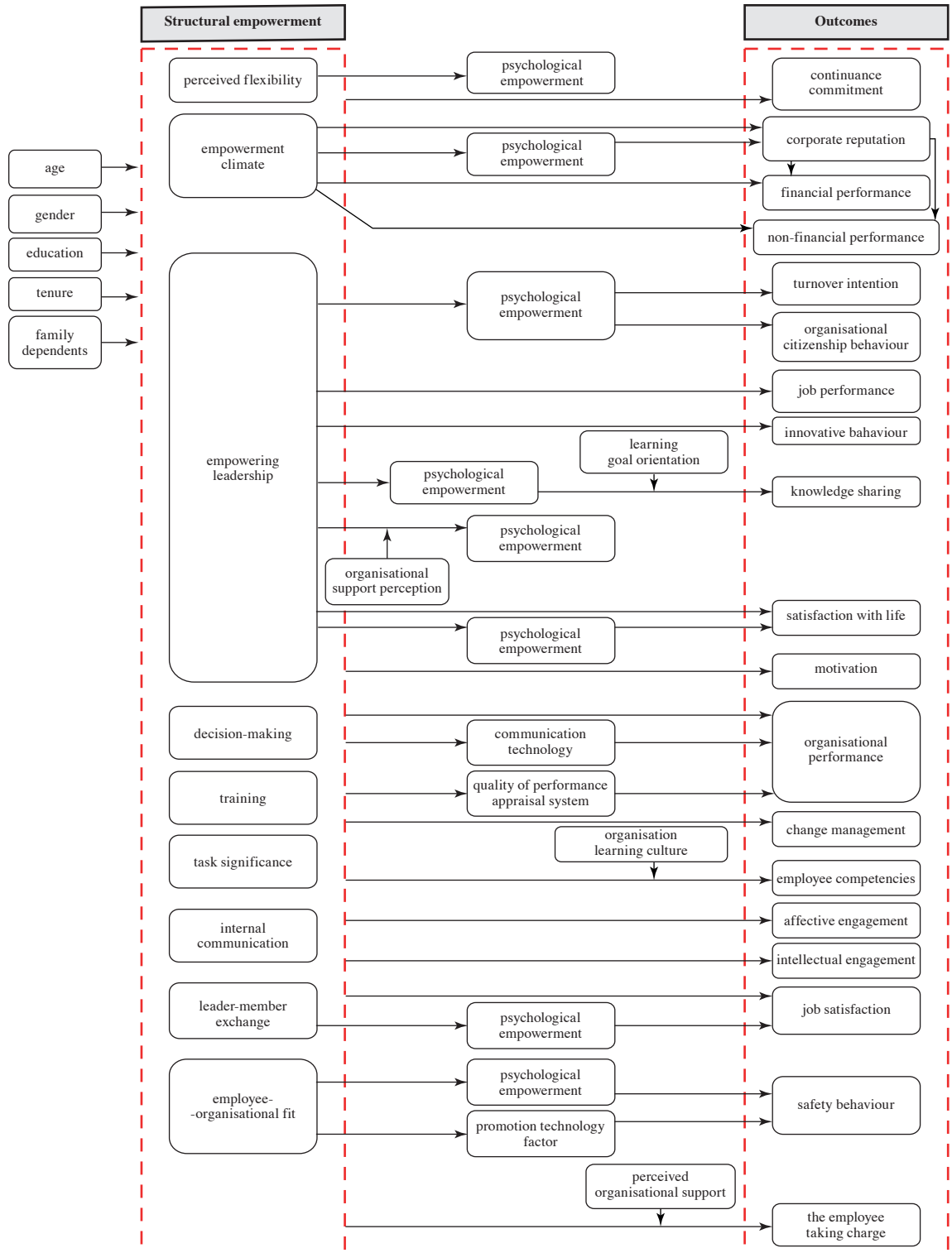


Fig. 5. Summary of the Presentation of the Undertaken Research Directions and Moderating Variables of Empowerment in Industry

Source: the authors.

Quantitative research was conducted by Macinga *et al.* (2015) in three organisations, including an industrial organisation, to explore the relations between personality factors (i.e., extraversion and conscientiousness) and positive work outcomes (i.e., work engagement, affective organisational commitment, and organisational citizenship behaviour), and to determine the incremental effect of psychological empowerment on these outcomes. As a result, personality and psychological empowerment explain a significant amount of the variance in positive organisational outcomes, and psychological empowerment has a significant incremental value over demographics and personality for the studied outcomes.

A summary of the presentation of the undertaken research directions and moderating variables of empowerment in industry is shown in Figure 5. The diagram demonstrates that empowerment is a complex and multi-dimensional issue, which consists of management actions introduced and applied by the organisation when managers share their power by showing their trust and providing opportunities for employees to make decisions, contributing to giving employees a certain freedom of action and creating an employer-employee partnership relationship, which all contributes to creating a psychological sense of motivation in employees. Organisational and managerial actions called structural empowerment induce a psychological state called psychological empowerment which involves an individual's cognitions and perceptions that constitute feelings of behavioural and psychological investment in his or her work. Empowerment creates extensive beneficial consequences. For instance, it instils greater trust in leadership, encourages employee motivation, leads to greater creativity, and improves employee retention.

3.2. Recommended Future Directions of Research

The second objective of our research was to present the directions of future research recommended by the authors of the publications analysed in this study.

According to the researchers, results of longitudinal studies conducted at certain intervals would be more efficient and can provide deep insights into the phenomenon (Khatoon *et al.*, 2024; Ángeles López-Cabarcos, Vázquez-Rodríguez & Quiñoá-Piñeiro, 2022; Kumar, Liu & Jin, 2022; Nwachukwu *et al.*, 2021; Baird, Tung & Su, 2020; Potnuru, Sahoo & Sharma, 2019; Rayan, Sabaie & Ahmed, 2018; Yildirim & Naktiyok, 2017; Nel, Stander & Latif, 2015). Future studies can make an effort to solve the problem of the risk of common method variance due to using self-reported data (Juyumaya, 2022; Kumar, Liu & Jin, 2022; Nel, Stander & Latif, 2015).

In the future, researchers should consider other research designs in their studies. Future qualitative studies should allow for a greater analysis of the subject (Li, 2022; Baird, Tung & Su, 2020). To fill the gaps, it is recommended to reproduce conducted

studies in different types of organisations, levels, or industries to investigate the influence of cross-border cultural differences (Permana *et al.*, 2015).

Further research should be conducted at different levels, with larger sample sizes and across a wider demographic range (Rana & Singh, 2016). It is suggested that further studies be conducted in other countries with ethnic, perceptual, and cultural differences as well as different characteristics (Hajizadeh, Makvandi & Amirnejad, 2022). Future studies should also use employee-supervisor dyads to determine the differences in the perception of empowerment at different levels of the organisation (Khatoun *et al.*, 2024).

It is necessary to identify the variables that may determine the effects of leader behaviour. Variables that may relate to subordinates – skills, experience, or need for independence – will be relevant to subordinates. The level of formalisation and social support could be variables relating to the organisation (Ángeles López-Cabarcos, Vázquez-Rodríguez & Quiñoá-Piñeiro, 2022).

It turns out that transformational leadership dimmed the direct relationships between empowerment, social support, and work performance. Future research should therefore explore the mediating or moderating effects of the variables on the relationship between transformational leadership and job performance (Ángeles López-Cabarcos, Vázquez-Rodríguez & Quiñoá-Piñeiro, 2022).

Considering variables such as satisfaction with rewards (internal or external) and perception of fairness in future research may also provide very interesting results contributing to an even deeper understanding of the essence of empowerment (Li, 2022). Researchers may consider other factors, i.e., organisational learning culture, emotional intelligence, leader-member exchange, and focus on regulations (Kumar, Liu & Jin, 2022).

Future studies could examine whether dimensions of psychological empowerment have different effects on corporate reputation and how the dimensions of corporate reputation affect company performance (Özbağ & Çekmecelioğlu, 2022). Researchers can account for other leadership styles and their influence on employee empowerment (Saira, Mansoor & Ali, 2021). It is recommended to investigate the mediating role of psychological empowerment in the relationship between employee benefits and continuance commitment (Okolie & Ochei, 2020).

A comparison of the empowerment level in organisations would reveal the role of psychological empowerment on the group and organisational performance. Qualitative and longitudinal studies are required to study the different career stages of an employee to understand the role of perceived flexibility *vis-à-vis* psychological empowerment (Jena, Bhattacharyya & Pradhan, 2019). From the perspective of time, structural empowerment should be considered in order to explain the relationship between leadership style and innovative behaviour through the prism of organi-

sational features, which can include access to information, resources, and support (Dedahanov, Bozorov & Sung, 2019).

Future studies should include other elements of organisational structure, such as departmentalisation and work specialisation, and the impact of these on employee innovative behaviour via empowerment should be investigated (Rhee *et al.*, 2017).

We would also like to make some of our recommendations for future research. In future research, it is necessary to take into account the achievements of researchers representing the most industrialised countries, with particular attention to actual trends including industrial revolutions 3.0, 4.0 and 5.0. Future research could demonstrate the differences between the understanding and implementation of empowerment in countries with various degrees of industrialisation, and potentially determine the impact of the benefits resulting from the empowerment on the possibilities of industrial development in the context of the 3.0, 4.0 and 5.0 revolutions.

In our opinion, it should take into account literature sources from various databases. In addition, works from a wider period should be analysed, as the analysis of earlier studies can provide valuable information and solutions. Future research could be extended to literature published in languages other than English and accessible through a different access formula, which would allow for a deeper understanding of the problem. Future research on empowerment should take into account all the above-mentioned recommendations for future research directions put forward by researchers. An examination of the recommended research threads will significantly contribute to a deeper exploration of the issue of empowerment and will greatly contribute to the development of management science.

4. Conclusions

The main aims of this study were to examine what directions of research on empowerment have been carried out so far in business, what the results of the conducted research were, as well as what directions for future research on empowerment in the industry are recommended by researchers. All of the goals have been achieved.

The literature selected based on the adopted research assumptions was used to review the existing research on empowerment in business. A list of future directions of empowerment research postulated by the authors of the analysed articles has been presented. It seems particularly important to examine empowerment in the most industrialised countries, taking into account trends that include industrial revolutions 3.0, 4.0 and 5.0.

Recommendations for future research, compiled in the course of the analysis, pave the way for researchers. Research on empowerment in business appears to be particularly beneficial. Empowerment leads to increased ability of an organisation

to deal with issues and problems (especially in the VUCA world) and an increase in productivity, which is the main goal of business. Moreover, empowerment reduces the outflow of qualified staff with competencies acquired through many years of practice.

The last element of our deliberations was to define the limitations of our research. Bearing in mind the adopted research procedure based on the assumptions we made underlying our considerations, we can point out several limitations of our research. The first one is the use of only one database (Scopus). The second is the analysis of literature published within a specific period, while the third is the inclusion of only English-language literature. In addition, the research procedure included articles only available in the open-access format and covering only countries with specific industrialisation.

Authors' Contribution

The authors' individual contribution is as follows: Marcin Marchwiany 60%, Justyna Bugaj 40%.

Conflict of Interest

The authors declare no conflict of interest.

References

- Abualoush, S. H., Obeidat, A. M., Tarhini, A., Masa'deh, R. E., & Al-Badi, A. (2018). The Role of Employees' Empowerment as an Intermediary Variable between Knowledge Management and Information Systems on Employees' Performance. *VINE Journal of Information and Knowledge Management Systems*, 48(2), 217–237. <https://doi.org/10.1108/VJIKMS-08-2017-0050>
- Alias, N. E., Nokman, F. N., Ismail, S., Koe, W. L., & Othman, R. (2018). The Effect of Payment, Recognition, Empowerment and Work-life Balance on Job Satisfaction in Malaysia's Oil and Gas Industry. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 639–656. <https://doi.org/10.6007/IJARBS/v8-i9/4645>
- Ángeles López-Cabarcos, M., Vázquez-Rodríguez, P., & Quiñoá-Piñeiro, L. M. (2022). An Approach to Employees' Job Performance through Work Environmental Variables and Leadership Behaviours. *Journal of Business Research*, 140(3), 361–369. <https://doi.org/10.1016/j.jbusres.2021.11.006>
- Arefin, A. H. M. M., Md Altab Hossin, Md Sajjad Hossain, & Md Aktaruzzaman. (2018). The Dilemma of Investing in Human Resources: A Risky Initiative? *European Journal of Human Resource Management Studies*, 1(2), 139–149. <https://doi.org/10.5281/zenodo.1253733>
- Baird, K., Tung, A., & Su, S. (2020). Employee Empowerment, Performance Appraisal Quality and Performance. *Journal of Management Control*, 31(4), 451–474. <https://doi.org/10.1007/s00187-020-00307-y>

Czakon, W. (2011). Metodyka systematycznego przeglądu literatury. *Przegląd Organizacji*, 3(854), 57–61. <https://doi.org/10.33141/po.2011.03.13>

Czakon, W. (2013). Metodyka systematycznego przeglądu literatury. In: W. Czakon (Ed.), *Podstawy metodologii badań w naukach o zarządzaniu* (3rd ed.). Wydawnictwo Nieoczywiste.

Dedahanov, A. T., Bozorov, F., & Sung, S. (2019). Paternalistic Leadership and Innovative Behavior: Psychological Empowerment as a Mediator. *Sustainability*, 11(6), 1770. <https://doi.org/10.3390/su11061770>

Ekowati, V. M., Sabran, Supriyanto, A. S., Pratiwi, V. U., & Masyhuri. (2021). Assessing the Impact of Empowerment on Achieving Employee Performance Mediating Role of Information Communication Technology. *Quality – Access to Success*, 22(184), 211–216. <https://doi.org/10.47750/QAS/22.184.27>

Fatahi-Bayat, G., Goudarzi, A., & Goudarzi, M. (2016). Study on Variables Influencing the Employee Empowerment Case Study: Industries of Markazi Province. *Mediterranean Journal of Social Sciences*, 7(5), 2039–2117. <https://doi.org/10.5901/mjss.2016.v7n51p102>

Hajizadeh, H., Makvandi, F., & Amirnejad, G. (2022). The Effective Coaching Factors in Operational Managers of Persian Gulf Petrochemical Company in the Motivation of Human Resources. *International Journal of Engineering Business Management*, 14. <https://doi.org/10.1177/18479790211037222>

Hecklau, F., Galeitzke, M., Flachs, S., & Kohl, H. (2016). Holistic Approach for Human Resource Management in Industry 4.0. *Procedia CIRP*, 54, 1–6. <https://doi.org/10.1016/j.procir.2016.05.102>

Jena, L. K., Bhattacharyya, P., & Pradhan, S. (2019). Am I Empowered through Meaningful Work? The Moderating Role of Perceived Flexibility in Connecting Meaningful Work and Psychological Empowerment. *IIMB Management Review*, 31(3), 298–308. <https://doi.org/10.1016/j.iimb.2019.03.010>

Juyumaya, J. (2022). How Psychological Empowerment Impacts Task Performance: The Mediation Role of Work Engagement and Moderating Role of Age. *Frontiers in Psychology*, 13, 889936. <https://doi.org/10.3389/fpsyg.2022.889936>

Khatoon, A., Rehman, S. U., Islam, T., & Ashraf, Y. (2024). Knowledge Sharing through Empowering Leadership: The Roles of Psychological Empowerment and Learning Goal Orientation. *Global Knowledge, Memory and Communication*, 73(4–5), 682–697. <https://doi.org/10.1108/GKMC-08-2022-0194>

Kumar, N., Liu, Z., & Jin, Y. (2022). Evaluation of Employee Empowerment on Taking Charge Behaviour: An Application of Perceived Organizational Support as a Moderator. *Psychology Research and Behavior Management*, 15, 1055–1066. <https://doi.org/10.2147/PRBM.S355326>

Laloux, F. (2014). *Reinventing Organizations: A Guide to Creating Organizations Inspired by the Next Stage of Human Consciousness*. Nelson Parker.

- Lassoued, K., Awad, A., & Guirat, R. B. (2020). The Impact of Managerial Empowerment on Problem-solving and Decision-making Skills: The Case of Abu Dhabi University. *Management Science Letters*, 10(4), 769–780. <https://doi.org/10.5267/j.msl.2019.10.020>
- Li, Z. (2022). How Organizations Create Employee Based Brand Equity: Mediating Effects of Employee Empowerment. *Frontiers in Psychology*, 13, 862678. <https://doi.org/10.3389/fpsyg.2022.862678>
- Macsinga, I., Sulea, C., Sârbescu, P., Fischmann, G., & Dumitru, C. (2015). Engaged, Committed and Helpful Employees: The Role of Psychological Empowerment. *Journal of Psychology*, 149(3), 263–276. <https://doi.org/10.1080/00223980.2013.874323>
- Nel, T., Stander, M. W., & Latif, J. (2015). Investigating Positive Leadership, Psychological Empowerment, Work Engagement and Satisfaction with Life in the Chemical Industry. *SA Journal of Industrial Psychology*, 41(1), a1243. <https://doi.org/10.4102/sajip.v41i1.1243>
- Nwachukwu, C., Chládková, H., Agboga, R. S., & Vu, H. M. (2021). Religiosity, Employee Empowerment and Employee Engagement: An Empirical Analysis. *International Journal of Sociology and Social Policy*, 41(11/12), 1195–1209. <https://doi.org/10.1108/IJSSP-03-2021-0060>
- Obi, C. N., Leggett, C., & Harris, H. (2020). National Culture, Employee Empowerment and Advanced Manufacturing Technology Utilization: A Study of Nigeria and New Zealand. *Journal of Management & Organization*, 26(4), 460–482. <https://doi.org/10.1017/jmo.2017.70>
- Ochoa Pacheco, P., Cunha, M. P. E., & Abrantes, A. C. M. (2022). The Impact of Empowerment and Technology on Safety Behavior: Evidence from Mining Companies. *International Journal of Occupational Safety and Ergonomics*, 28(1), 581–589. <https://doi.org/10.1080/10803548.2020.1808343>
- Okechukwu, E. U., Nnamani, E., & Jude, E. (2015). Employee Empowerment and Teamwork in Management of Change: Techniques, Challenges and Prospects. *Journal of Policy and Development Studies*, 9(3), 126–141. <https://doi.org/10.12816/0011171>
- Okolie, U. C., & Ochei, J. O. (2020). Employee Empowerment and Continuance Commitment in the Nigerian Manufacturing Industry. *International Journal of New Economics and Social Sciences*, 11(1), 209–222. <https://doi.org/10.5604/01.3001.0014.3542>
- Özbağ, G. K., & Çekmecelioğlu, H. G. (2022). The Relationships among Employee Empowerment, Corporate Reputation, and Firm Performance: Research in the Turkish Manufacturing Industry. *Review of Business Management*, 24(1), 23–47. <https://doi.org/10.7819/rbgn.v24i1.4148>
- Permana, I., Tjakraatmadja, J. H., Larso, D., & Wicaksono, A. (2015). Exploring Potential Drivers of Employee Engagement, Enablement, and Empowerment: A Quest toward Developing a Framework for Building Sustainable Employee Excellence for Manufacturing Environment in Indonesia. *Mediterranean Journal of Social Sciences*, 6(2 S1), 577–587. <https://doi.org/10.5901/mjss.2015.v6n2s1p577>
- Potnuru, R. K. G., Sahoo, C. K., & Sharma, R. (2019). Team Building, Employee Empowerment and Employee Competencies: The Moderating Role of Organizational Learning

- Culture. *European Journal of Training and Development*, 43(1–2), 39–60. <https://doi.org/10.1108/EJTD-08-2018-0086>
- Rana, S., & Singh, V. (2016). Employee Empowerment and Job Satisfaction: An Empirical Study in IT Industry. *IOSR Journal of Humanities and Social Science*, 21(10), 23–29.
- Rayan, A. R. M., Sebaie, A. S. M., & Ahmed, N. A. (2018). The Mediating Role of Psychological Empowerment in the Relationship between the Empowering Leadership Behavior and Work Engagement: A Study Applied on the Cement Sector in Upper Egypt. *International Journal of Business and Management*, 13(12), 18–30. <https://doi.org/10.5539/ijbm.v13n12p18>
- Rhee, J., Seog, S. D., Bozorov, F., & Dedahanov, A. T. (2017). Organizational Structure and Employees' Innovative Behavior: The Mediating Role of Empowerment. *Social Behavior and Personality*, 45(9), 1523–1536. <https://doi.org/10.2224/sbp.6433>
- Saira, S., Mansoor, S., & Ali, M. (2021). Transformational Leadership and Employee Outcomes: The Mediating Role of Psychological Empowerment. *Leadership & Organization Development Journal*, 42(1), 130–143. <https://doi.org/10.1108/LODJ-05-2020-0189>
- Sun, L., & Bunchapattanasakda, C. (2019). Employee Engagement: A Literature Review. *International Journal of Human Resource Studies*, 9(1), 63–80. <https://doi.org/10.5296/ijhrs.v9i1.14167>
- Tukiman Hendrawijaya, A. (2019). Demographic Factors and Employee Performance: The Mediating Effect of Employee Empowerment. *Media Ekonomi Dan Manajemen*, 34(2), 116–136. <https://doi.org/10.24856/mem.v34i2.962>
- Yildirim, F., & Naktiyok, S. (2017). The Mediating Role of Organizational Support in the Effect of Transformational Leadership on Employee Empowerment. *Polish Journal of Management Studies*, 16(1), 292–303. <https://doi.org/10.17512/pjms.2017.16.1.25>
- Yusoff, R. B. M., Imran, A., Qureshi, M. I., & Kazi, A. G. (2016). Investigating the Relationship of Employee Empowerment and Sustainable Manufacturing Performance. *International Review of Management and Marketing*, 6(4S), 284–290.

KREM, 2025, 1(1007): 105–125
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18175>

Analysis of the Feasibility of the Restructuring Plan: A Case Study of Poland

Krzysztof Gawron

Maria Curie-Skłodowska University in Lublin, Faculty of Economics, Department of Enterprise Finance and Accounting, 5 M. Curie-Skłodowska Square, 20-031 Lublin, Poland,
e-mail: krzysztof.gawron@mail.umcs.pl, ORCID: <https://orcid.org/0000-0002-7770-1679>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Gawron, K. (2025). Analysis of the Feasibility of the Restructuring Plan: A Case Study of Poland. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 105–125. <https://doi.org/10.15678/krem.18175>

ABSTRACT

Objective: The aim of the study is to assess the possibility of using the cost-benefit analysis (CBA) method as a practical tool for analysing the feasibility of restructuring plans prepared in accordance with Polish restructuring law regulations.

Research Design & Methods: Qualitative methods, i.e. analysis of documents and review of literature and legal acts, as well as quantitative methods, i.e. cost-benefit analysis, were used for the analyses. The article uses data obtained as part of pilot scientific research of court files of restructuring cases conducted in the District Court for the capital city of Warsaw in 2016–2021.

Findings: The article presents the principles of feasibility analysis using this method and then presents its advantages and limitations in the case of assessing restructuring plans. The main identified limitation is the lack of the need to present cash flow forecasts in the plan in accordance with the regulations of the Polish restructuring law. Information on projected revenues and expenses is necessary to assess the effectiveness and financial sustainability of the project.

Implications/Recommendations: The cost-benefit analysis method is a useful practical tool for clear assessment of restructuring plans submitted during restructuring proceedings and it allows us to objectively assess and make a rational decision whether a given project is worth implementing and whether it requires public funding.

Contribution: The research expands knowledge about methods of analysing restructuring plans.

Article type: original article.

Keywords: restructuring plan, feasibility analysis, cost-benefit analysis method, financial analysis.

JEL Classification: G34, K49.

1. Introduction

The restructuring process is an economic undertaking described in the restructuring plan. The restructuring plan is intended to provide sound footings to enable the court and creditors to assess the possibilities of implementing restructuring measures and composition proposals. An in-depth analysis of the information contained in the restructuring plan is required to make such an assessment possible. Due to the fact that the restructuring plan is a document similar to a business plan, we can apply the methods used for the assessment of investment projects to analyse it. Depending on when the assessment of the restructuring project takes place, such analysis can have different objectives. The basic questions to be answered in the case of the preliminary analysis of the restructuring plan, are the following:

- 1) is it possible to carry out the planned activities?
- 2) will their implementation ensure achievement of the forecasted economic benefits?
- 3) will the means thus implemented ensure the satisfaction of creditors at a higher level than in the case of insolvency proceedings?

The above analysis, therefore, constitutes the feasibility study of the project.

The second stage of the analysis of the restructuring process is the assessment during the implementation of the planned activities. It is applied to verify whether, and to what extent the plan is enacted. After the adoption and approval of the arrangement, the analysis of the entity's reports, especially by its creditors, is intended to monitor the implementation of the agreement. This is performed by comparing the results actually achieved by the entity with the forecasts included in the justification of the proposed measures.

Finally, the third stage is the *ex-post* analysis, i.e. after the completion of the restructuring plan. Its task is to evaluate the effectiveness of the procedure. This serves two objectives. The first is to determine the remuneration of the administrator and practitioner appointed by the court and should take into account the effort and quality of work performed by the court-appointed administrator or practitioner. The court determines the value of this remuneration mainly on the basis of the analysis of periodic and final reports on activities and accounting reports. The second objective is to analyse the effectiveness of the proceedings, which allows us to determine the desired changes in statutory regulations and create good practices.

This article focuses on the first type of analysis, i.e. on the assessment of the initial restructuring plan. The objective of the study is to assess the possibility of applying methods of assessing the feasibility of European projects as a practical tool for analysing the feasibility of restructuring plans drawn up in accordance with Polish regulations of restructuring law. The focus will be particularly on the identification of the advantages and limitations of applying the cost-benefit analysis (CBA) method as a basis for the bankruptcy court and creditors to decide on the implementation of the restructuring plan and the adoption of composition proposals.

2. Restructuring Plan

The restructuring plan is the crucial element of the restructuring procedure. Its task is to present the current economic situation of the debtor's enterprise, as well as the causes that led to the occurrence of the crisis, and to present the method of correcting erroneous decisions and limiting their negative impact. It is a complex document, similar to a business plan, however, there is no universal template. In accordance with article 8 of Directive (EU) 2019/1023 of the European Parliament and of the Council, the content of the restructuring plan should contain at least the following information:

- 1) the identity of the debtor,
- 2) the debtor's assets and liabilities at the time of submission of the restructuring plan,
- 3) the affected parties (creditors), whether named individually or described by categories of debt in accordance with national law, as well as their claims or interests,
- 4) where applicable, the classes into which the affected parties have been grouped, and the respective values of claims and interests in each class,
- 5) the parties, whether named individually or described by categories of debt, which are not affected by the restructuring plan, together with a description of the reasons why it is proposed not to affect them,
- 6) the identity of the practitioner (supervisor) in the field of restructuring,
- 7) the terms of the restructuring plan, including:
 - a) the proposed restructuring measures and their duration,
 - b) the arrangements with regard to informing and consulting the employees' representatives,
 - c) description of overall consequences as regards employment,
 - d) the estimated financial flows of the debtor in accordance with national law,
 - e) a description of any new financing anticipated as part of the restructuring plan, and the reasons why the new financing is necessary to implement that plan,

8) a statement of reasons, including:

- a) an explanation of why the plan will prevent the debtor from insolvency and ensure the viability of its business,
- b) the necessary pre-conditions for the success of the plan,
- c) where national law also requires the justification/opinion of the expert or the restructuring practitioner.

In addition, Directive 2019/1023 introduced a comprehensive checklist of plans for the purposes of restructuring small and medium-sized enterprises. This should be prepared and made available by the Member States online in both the official language of the respective country and in at least one other language used in international trade. In addition, Directive 2019/1023 introduced the requirement to prepare the so-called “viability test,” which is a condition for access to forms of preventive restructuring. It aims to eliminate debtors who have no chance of regaining profitability, and the test itself can be carried out without negatively affecting the debtors’ assets.

In connection with the Directive 2019/1023, a Draft Act amending the Restructuring Law and Bankruptcy Law Acts was prepared in Poland. It assumes the introduction of an obligation for the practitioner or administrator to prepare a satisfaction test, which will serve as the “viability test.” It shall contain:

1) valuation indicating the methods and assumptions adopted during its preparation for:

- a) the value of the debtor’s enterprise assuming the implementation of the restructuring plan and continuation of business by the debtor,
- b) the value of the debtor’s assets, assuming that the debtor is declared bankrupt and the enterprise is sold as a whole, and in cases in which the enterprise will not be sold as a whole and the sale of its individual assets will be performed instead,

2) information on the expected degree of satisfaction of creditors whose claims are covered by the arrangement in bankruptcy proceedings that would be conducted against the debtor, and containing the following data:

- a) the value of the debtor’s assets,
- b) the expected duration of the insolvency proceedings and the expected cost of the insolvency proceedings and other liabilities of the insolvent estate,
- c) the category in which creditors representing different interest classes would be satisfied in the insolvency proceedings,

3) assessment of whether the claims covered by the arrangement will be satisfied to a greater extent in the event of conclusion and implementation of the arrangement – or through bankruptcy proceedings.

The introduction of the satisfaction test will make it possible for the creditors to question the legitimacy of the arrangement. In addition, it will allow the debtor to apply to the court through the cramdown mechanism to enforce the arrangement

despite the objection of some groups of creditors. The introduction of the satisfaction test provided creditors with the information necessary to make an informed decision on how to vote or, possibly, to propose alternative solutions to those reported.

Polish regulations regarding restructuring plans are subject to evolution along with changes in the Polish bankruptcy model. In the original wording of the Act of 28 February 2003 – Bankruptcy and Rehabilitation Law contains minimum requirements for composition proposals agreed, concluded and approved as part of composition and insolvency procedures. The composition proposals had to include a description of one or more ways of restructuring the liabilities and a statement of reasons for which the implementation of the composition agreement will lead to the real satisfaction of the creditors.

Arrangement proposals could be submitted by the debtor, the creditor, the court supervisor and a practitioner within one month of the date of issue of the decision to declare bankruptcy. In addition, the debtor was also obliged to prepare a cash flow statement for the previous 12 months, attaching it to its arrangement proposal. This concerned only those entities which kept appropriate documentation, i.e. books of accounts (Witosz, 2010, p. 495).

Act of 15 May 2015 – Restructuring Law, which has been in force since 1 January 2016, introduced legal instruments in the form of restructuring proceedings, allowing for resolving a debtor's crisis situation resulting from their insolvency or threat of insolvency and the related conflict with creditors (Hrycaj, 2015). The overriding objective of restructuring proceedings is to avoid the debtor's bankruptcy by enabling them to restructure by concluding an arrangement with creditors, and, in the case of remedial proceedings, also by carrying out remedial actions while securing the legitimate interests of creditors. The basic tool for achieving this objective is the restructuring plan drawn up in the course of the proceedings and the actions taken based upon it. The preparation of a restructuring plan constitutes a mandatory element of all types of restructuring proceedings described in the said act.

The process of each of the four restructuring proceedings in accordance with Polish restructuring law is similar. It requires a restructuring petition to be filed with the court, cooperation between the debtor and the court supervisor or administrator, a restructuring plan, inventory of claims and arrangement proposals to be prepared, voting to accept the agreement, and then the arrangement to be approved by the court. The key activities carried out during restructuring proceedings are illustrated in Figure 1.

Depending on the type of restructuring proceedings, a restructuring plan is drawn up by the restructuring practitioner, court supervisor or administrator. In situations where it is particularly justified, unless it is a proceeding for approval of an arrangement, a third party may be commissioned to prepare a restructuring plan. Approval of the restructuring plan takes place only in remedial proceedings.

The judge-commissioner shall make such a decision after obtaining an opinion from the council of creditors. Article 10 of the Restructuring Law defines the minimum formal requirements of a restructuring plan, i.e.:

- 1) description of the enterprise,
- 2) market description,
- 3) analysis of the causes of the crisis,
- 4) characteristics of the future strategy and risk analysis,
- 5) review of restructuring measures and related costs,
- 6) capacity data,
- 7) description of methods and sources of financing,
- 8) profit and loss forecast for the next five years,
- 9) the names of the persons responsible for implementing the arrangement and of the authors of the restructuring plan,
- 10) the date of drawing up the plan.

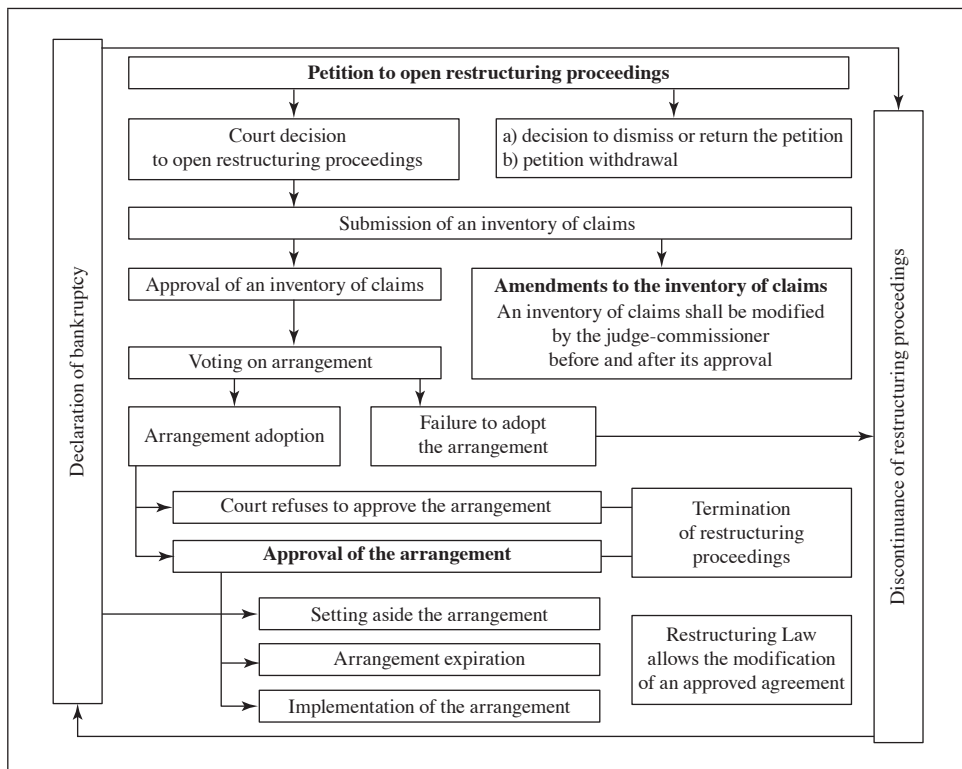


Fig. 1. Key Activities to Be Carried out during Restructuring Proceedings in Poland

Source: Zaremba (2022, p. 137).

Table 1. The Content of the Private Creditor Test and the Private Investor Test

Private Creditor Test	Private Investor Test
1) information about the expected degree of satisfying individual public law creditors under the proposed arrangement 2) information about expected degree of satisfying individual public law creditors in bankruptcy proceedings which would be conducted against the debtor 3) an assessment as to whether the public law creditor’s claims will be met to a greater extent in case of either the conclusion and performance of the arrangement or in bankruptcy proceedings	1) the expected level of return on invested funds 2) the average return on funds employed in comparable investments 3) the expected level of risk associated with the investment 4) the average risk of comparable investments

Source: the author, based on Article 140 of the Act of 15 May 2015 – Restructuring Law.

Where public aid may be granted in restructuring proceedings, the restructuring plan must additionally contain a private creditor test or a private investor test (MEIP test) and a *de minimis* aid assessment. In justified cases, the court may agree to a limited form of the restructuring plan, omitting some of the formal requirements mentioned above (Hrycaj & Filipiak, 2017). The role of the private creditor test for public creditors will be fulfilled by the satisfaction test in the future. The content of both the private creditor test and the private investor test is presented in Table 1.

3. Research Methodology – CBA Method

The feasibility of the project is the possibility of its effective implementation under specific conditions and constraints. One of the most popular methods of determining the feasibility of projects is the TELOS method proposed by James A. Hall (2011, p. 579). The feasibility analysis usually results in the elaboration of a feasibility study. Detailed guidelines have been developed at the level of the European Union for the preparation and assessment of the feasibility of large European projects – Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013. The cost-benefit analysis (CBA) is the basis for the feasibility analysis of EU projects. It is presented in detail in the European Commission’s *Guide to Cost-Benefit Analysis of Investment Projects* (European Commission, 2015). The CBA is an analytical tool used to assess the economic advantages and disadvantages of an investment decision by evaluating the related costs and benefits. The analysis is used to evaluate projects, although it can also be applied for evaluation during and after the implementation of the project. Project evaluation by means of the cost-benefit analysis consists of seven stages.

The first stage of project evaluation is to present the context, i.e. the social, economic, political and institutional environment in which it will be implemented. The presentation of the context is important from the perspective of forecasting future trends, e.g. demand, revenues, costs, flows, etc. The subsequent step is to define the project objectives. In the case of EU projects, the objectives (targets) should be set on the basis of needs, which in turn should result from the context described in the previous stage. An objective of the project should be to meet specific needs, allowing verification of the suitability of the project. The objectives should also be carefully quantified using indicators to allow for their further evaluation as part of a cost-benefit analysis. The third step is project identification. According to the guidelines of the European Commission, the description of the project should make it possible to unambiguously identify the project as a stand-alone feasibility analysis unit. It should clearly indicate the entity responsible for the implementation of the project, the beneficiaries of the project, as well as activities and “physical elements” that will be implemented to achieve the planned objectives. The fourth stage requires the preparation of basic information about technical feasibility and environmental sustainability.

The fifth stage is financial analysis. Its objective is to examine whether the planned project is financially effective. Financial efficiency has been defined in the *Guide to Cost-Benefit Analysis* prepared by the European Commission as “profitability from an investor’s perspective,” i.e. whether the expected benefits of the project will exceed the investment outlays. It involves examining the financial flows related to the project and determining the financial efficiency indicators of the project. The use of the term “profitability” in this context may therefore be misleading, as profitability implies a positive difference between revenues and costs, rather than inflows and outflows. An entity may be profitable but simultaneously insolvent if it is unable to generate sufficient cash flows to meet its due obligations. Therefore, in the article, the concept of financial viability will be used instead of profitability when assessing financial efficiency of the restructuring plan. Financial analysis in the CBA method is carried out in order to:

- assess the financial viability of investments,
- verify the financial sustainability of the project,
- find the right source of additional funding.

The method of financial analysis is the discounted cash flow (DCF) method. Net present value (NPV) is the difference between discounted proceeds and expenses incurred for the investment in the respective periods. It is determined according to the following formula:

$$NPV = \sum_{i=1}^N \frac{CF_i}{(1+d)^i},$$

where:

CF_i – net cash flows in i -th period, i.e. the difference between inflows and outflows incurred in i -th period,

d – the discount rate,

N – payback period.

Two variants of the forecasts are analysed, i.e. the baseline scenario and the pessimistic scenario, with the pessimistic used predominantly for the purpose of risk and sensitivity analysis.

The second way to assess the economic efficiency of an investment is to determine and compare the internal rate of return (IRR). IRR is the discount rate at which the net present value of the cost-benefit stream equals 0. It can be ascertained by solving the following equation:

$$0 = \sum_{i=1}^N \frac{CF_i}{(1 + IRR)^i}.$$

At the same time, IRR is the discount rate at which the economic break-even point is reached, as well as the maximum acceptable cost of capital when financing an investment (Bogucki, 2016, p. 261). The advantage of using IRR is the ability to assess the effectiveness of the investment without assuming a discount rate.

According to the guide, the following indicators should be used to assess project viability:

1) the financial net present value – FNPV(C) and the financial rate of return – FRR(C) – on investments,

2) the financial net present value – FNPV(K) and the financial rate of return – FRR(K) – on domestic capital.

The first two indicators – FNPV(C) and FRR(C) – measure the extent to which an investment can be financed from the project's revenues regardless of its sources and methods of financing. Their calculation enables us to discern whether the project requires financial support, i.e. when the FNPV(C) is negative. For large projects, FNPV(K) and FRR(K) are also determined. All sources of funding are taken into account in their calculation, with the exception of the EU contribution. For an EU-funded project, the FNPV(K) should be negative or equal to zero and the FRR(K) should be lower or equal to the reference discount rate.

The financial sustainability analysis examines whether the available internal and external sources of financing will correspond, year to year, to the expenses incurred. The project is financially sustainable when the risk of running out of cash equals nil. This is the case when the cumulative cash flows generated in all analysed years are positive. Inflows include sources of funding and operating income, as well as transfers, subsidies and other financial benefits. Expenses are initial outlays, oper-

ating and replacement costs, repayment of loans and interest, and taxes – including income tax.

Economic analysis is the next stage after the analysis of the financial assessment of the costs and benefits of the project. This analysis provides an answer to the question of whether a given project deserves to be implemented from the point of view of social welfare. It is carried out by adjusting the results of the financial analysis by taking into account: fiscal adjustments, settlement prices (called “hidden prices”) and external effects. Fiscal adjustments include the deduction of indirect taxes, subsidies and other contributions or expenses that have no equivalent in real resources, e.g. social security payments. Market price adjustments are necessary in the event of market distortions because the prices observed on the market do not reflect all social costs. An externalities adjustment is a valuation of those cost-benefit components that do not occur in conventional commodity markets and therefore occur without cash flows and were, hence, not recognised directly in the financial analysis.

After adjusting inflows and expenses for the above adjustments, the following indicators are calculated:

- economic net present value (ENPV), i.e. the difference between discounted total benefits and social costs,
- the economic rate of return (ERR), i.e. a rate giving zero value to the ENPV,
- B/C ratio, i.e. the ratio of discounted economic benefits to costs.

The calculations shall adopt a uniform economic discount rate, known as the social discount rate (SDR), according to the reference value indicated by the European Commission. By accounting for hidden prices and externalities, most projects with a low or negative NPV will have a positive ENPV. If the ENPV is still negative, the project should be rejected. If $ENPV > 0$, where $ERR > SDR$, this means that the public needs such a project and it should be co-financed. In this case, the B/C ratio takes a value greater than 1.

Pursuant to EU Regulation No 1303/2013, the CBA analysis should also contain risk assessment, which should include: sensitivity analysis, qualitative risk analysis, probabilistic assessment, as well as risk prevention and risk mitigation. Sensitivity analysis consists of determining the impact of critical single variables on the value of project performance indicators and its financial sustainability. As part of the qualitative risk analysis, a list of risks is prepared, followed by a risk matrix that assigns impact and probability to each adverse event. On this basis, the level of risk is determined, as well as measures to prevent or reduce the effects of risk.

In order to achieve the set objective, a pilot study consisting of the analysis of restructuring case files was carried out. The research was carried out in the District Court (Polish: Sąd Rejonowy) for the capital city of Warsaw. Files of restructuring cases which were submitted to the court after 1 January 2016 were analysed.

Table 2. Number of Restructuring Proceedings Initiated in 2016–2021 Covered by the Research

Type of Proceedings	2016	2017	2018	2019	2020	2021	Total
Accelerated arrangement proceedings	4	12	7	5	6	1	35
Arrangement proceedings	0	0	1	1	0	1	3
Remedial proceedings	0	0	2	3	0	0	5
Total	4	12	10	9	6	2	43

Source: the author.

Further research included only those cases where the agreement was adopted, the proceedings were completed with the implementation of the arrangement or its repeal, and the cases were archived. 43 companies were included in the research. As of the date of the audit, 6 approved plans were cancelled due to the cessation of their implementation. Information on the analysed entities is presented in Table 2.

4. Empirical Results

The analytical part of the feasibility assessment, i.e. the appropriate technical, financial and economic analysis of the restructuring plan, should be preceded by the preparation of the diagnostic and conceptual part of the feasibility study. The diagnostic part includes: presentation of the project’s objective, description of its current state with an indication of the identified problems, and an analysis of the context and stakeholders. The objective of the project is clear and results directly from the provisions of the Restructuring Law. The target is, therefore, to avoid insolvency, thereby limiting the unnecessary liquidation of viable enterprises. In this way, restructuring prevents the loss of jobs, expertise and skills, while at the same time ensuring maximum returns to creditors, owners, and the economy as a whole.

The description of the current state in the restructuring plan was named in the restructuring law as a description of the debtor’s enterprise and an analysis of the reasons for its difficult economic situation. The characteristics of the enterprise are sometimes very diverse and are most often adapted to the scale of the business unit. The elements of this description contained in the analysed plans are presented in Table 3.

The analysis of the underlying causes of the debtor’s difficult economic situation is a descriptive element of the restructuring plan, the purpose of which is to present – to the court and creditors – that the debtor has correctly recognised the causes of the current difficult situation and knows how to avoid such a situation in the future. The analysis should indicate and describe the causes of the state of insolvency or threat of insolvency and rank them in terms of their impact on the functioning of the debtor’s enterprise. Furthermore, the description should include an indication of the internal and external factors of the crisis. If the reason was of a macro-

economic nature, it should also be demonstrated how much this situation deviated from normal market changes and how it affected competition (Zimmerman, 2020, p. 1393).

Table 3. Elements of the Description of the Current State of the Enterprise in the Analysed Restructuring Plans

Enterprise Description Content	Number of Plans That Contain Data
Identification information	43
History of the economic entity	13
Core business	42
Organisational structure	12
Ownership structure	20
Liability structure	9
Employment	15
Initiated court proceedings	3
Description of assets	15
Description of the production capacity	25
Cost and revenue information	19

Source: the author.

The presentation of the context, or the analysis of the environment, is used to determine external factors, most often independent of the enterprise, of an economic, legal and social nature, that affect the functioning of the entity now and will affect it in the future. Its task is to identify opportunities and threats for further development and determine how they can be used as stimuli for this development (Dynus, Kołosowska & Prewysz-Kwinto, 2005). Thanks to this presentation, it is possible to assess the assumptions adopted for the preparation of financial forecasts, including the level of sales, assumed revenues and costs, and cash flows. This stage is required for subsequent feasibility analysis, and, in particular, for risk analysis. A full environmental analysis should include three elements (Sierpińska & Jachna, 2004, pp. 14–16):

- assessment of social and legal conditions,
- market analysis,
- analysis of competition.

Unfortunately, from the perspective of the requirements of the Restructuring Law, the scope of the context analysis was limited only to presenting information about the current and future state of supply and demand in the market sector in which the business operates. This item of the plan includes an indication of the

market in which the enterprise operates in both the territorial and industry sense, and if this market is narrower, an indication of the specialisation or market niche in which the company operates. As part of the market analysis, the main competitors should be identified and the market position of the debtor should be assessed against its competition. This is to demonstrate that in the future there are prospects for the disposal of products produced by the debtor, in particular, at assumed prices and in increased quantities as a result of the restructuring. After determining the current state of the market and the position of the debtor within it, a forecast for the future should be presented. This forecast should indicate how the market demand and supply will develop over the entire period of the plan’s implementation and how the debtor’s market share will change. This part of the examined restructuring plans was developed to a different extent, as shown in Table 4.

Table 4. Elements of the Environment Description in the Analysed Restructuring Plans

Environment Description Content	Number of Plans That Contain Data
Market characteristics	38
Description of the current demand level	29
Description of the future level of demand	12
Current market supply	27
Identification of main competitors	5
Current market share	4
Future market supply	11
Planned market share	0
Not including any data about the environment	5

Source: the author.

The conceptual part of the EU project feasibility study includes the presentation of the technical design, cost estimates and project implementation schedule. The role of this part in the restructuring plan is performed by the presentation of the future strategy, an overview of the restructuring measures and related costs, and a timetable for the implementation of the planned corrective actions, including the deadline for their implementation. The characterisation of the debtor’s future business strategy includes a description of the target condition of the enterprise, taking into account the adopted business model. The description of corrective measures should cover the key areas of the company’s operation, mainly those that are the source of issues, and, in particular, the restructuring of: finances, current assets, fixed assets and organisation. An obligatory element of this part of the plan is to provide a forecast of restructuring costs broken down into periods. In addition, the restructuring plan

should include a description of the level of production capacity, the level of capacity utilisation and the planned level of capacity reduction.

The relevant analytical part of the feasibility study in accordance with the CBA method includes technical feasibility analysis, financial analysis, economic analysis, and risk assessment. The strategy of restructuring activities described in the conceptual part should be based on the diagnostic part of the plan, i.e. analysis of the causes of the difficult situation and analysis of the environment. Technical analysis of the feasibility of the plan consists of verifying these assumptions and checking whether the planned activities actually result from them, and therefore their implementation is reliable and realistic. It is used to ascertain whether the entity has sufficient resources to meet the assumed level of production and whether the market situation will allow it to achieve the assumed sales levels. As part of the verification of the plan's assumptions, special attention should be paid to the possibility of adopting unrealistic production and sales growth rates, underestimating outlays and costs or partially ignoring them, overestimating prices or production capacity.

The financial feasibility analysis shall include an assessment of the financial viability of the project. It consists of:

- analysis of cash flows related to the implementation of the project,
- analysis of financing sources,
- assessment of financial viability,
- financial sustainability assessment.

In the case of the financial analysis of the restructuring plan we encounter significant limitations. Pursuant to the requirements of the restructuring law, the plan is obliged to present the projected profits and losses for the next five years in at least two variants, real and pessimistic. Both options should include a justification indicating the criteria for the selection of turnover and profitability parameters. However, the Act lacks a clear requirement to prepare cash flow forecasts, let alone entire *pro forma* financial reports. Indeed, only 11 of the researched entities included the forecasted values of inflows and outflows throughout the plan implementation period.

The sources of financing are presented in the restructuring plan in a much more detailed manner. It is obligatory to unambiguously indicate from what means the arrangement will be implemented. These may be revenues from running a business, revenues from liquidation of assets, financial obligations of shareholders and third parties, i.e. a loan or credit from shareholders, capital contributions, issue of bonds, new shares or stocks. In addition, the amount of and demand for the requested and granted State aid and *de minimis* aid or *de minimis* aid in agriculture or fisheries should be presented separately. Moreover, data on sources of financing should be provided with an indication of specific inflows from individual sources in subse-

quent periods. The costs and other conditions of obtaining the financing should also be presented.

The assessment of the financial viability of the restructuring plan is based on the discounted cash flow method and consists of determining the net present value of the project (NPV) and the internal rate of return (IRR). The rules for determining them are described in the previous section of the article. The restructuring plan is viable if the NPV is greater than 0 and the IRR is greater than the discount rate (DR). However, while the NPV can be determined in every case, i.e. for any flows in individual years, it is not always possible to determine the IRR. This is the case when the positive and negative net flows intertwine in subsequent years of the forecast. Such projects are called “atypical” (Brigham, 1996, p. 72). In these situations, either the IRR does not exist at all or it may take several different values for which $NPV = 0$. In turn, the financial sustainability analysis is based on cumulative net flows in all years of the forecast. The results of the analysis of financial viability and financial sustainability of the examined restructuring plans containing information on flows are presented in Table 5. The detailed source data are provided in Table A.1 in Appendix.

Table 5. The Results of the Analysis of Financial Viability and Financial Sustainability of the Examined Restructuring Plans

Case Number	DR (%)	NPV(1)	IRR(1)	NPV(2)	IRR(2)	cCF
4	4.04	$NPV(1) > 0$	$IRR(1) > DR$	$NPV(2) > 0$	$IRR(2) > DR$	$cCF > 0$
5	4.04	$NPV(1) > 0$	$IRR(1) > DR$	$NPV(2) < 0$	$IRR(2) < 0$	$cCF > 0$
6	4.04	$NPV(1) < 0$	$IRR(1) < 0$	N/A	N/A	$cCF > 0$
7	4.05	$NPV(1) > 0$	$IRR(1) > DR$	N/A	N/A	$cCF > 0$
25	4.03	$NPV(1) > 0$	x_1	N/A	N/A	$cCF > 0$
26	4.03	$NPV(1) > 0$	x_1	$NPV(2) > 0$	x_2	$cCF > 0$
27	4.03	$NPV(1) > 0$	$IRR(1) > DR$	$NPV(2) > 0$	$IRR(2) > DR$	$cCF > 0$
30	4.04	$NPV(1) > 0$	$IRR(1) > DR$	N/A	N/A	$cCF > 0$
31	4.04	$NPV(1) > 0$	$IRR(1) > DR$	$NPV(2) > 0$	x_2	$cCF > 0$
38	4.07	$NPV(1) > 0$	x_1	N/A	N/A	$cCF > 0$
42	4.07	$NPV(1) > 0$	x_1	N/A	N/A	$cCF > 0$

Notes: cCF – cumulated cash flow in each forecast year, NPV(1), IRR(1) – refer to the basic variant of the forecast, NPV(2), IRR(2) – relate to the pessimistic variant of the forecast (if it was included in the plan), DR – the adopted discount rate, x_1 – IRR not specified due to the presence of only positive flows in the forecast, x_2 – no IRR for which $NPV = 0$.

Source: the author.

The analysis applied discount rates determined at the level of the reference rate used to calculate the value of public aid.¹ Herein, a margin of 220 basis points was added to the base rate published by the European Commission according to the margin table for category B rating indicating the satisfactory economic and financial situation of the entrepreneur and the standard estimated level of collateral. The table reveals that, when analysing the baseline forecasts, one of the projects (no. 6) was not financially viable and should not have been adopted. In addition, the pessimistic variant of the cash flow forecast was presented only for 5 of the examined restructuring plans. Of these forecasts, one (no. 5) was not financially viable. This option should have been subjected to a thorough risk assessment before deciding on the implementation of the project. In terms of assessing financial sustainability, however, all the projects analysed, in both the basic and pessimistic variants, had positive cumulative net cash flows in each forecast period, and were therefore financially sustainable.

An additional element of the financial analysis of the project, i.e. the restructuring plan, is the assessment of to what extent the application of restructuring measures is the optimal option for satisfying creditors' claims. This necessitates comparing the level of satisfaction of creditors through the implementation of the arrangement to the expected level of satisfaction of creditors in the result of bankruptcy proceedings aimed at liquidating the debtor's assets. The satisfaction test will be the future tool for this end. At the moment, the restructuring plan does not contain such information in relation to all creditors. Currently, it is the private creditor test that plays the role of a satisfaction test in relation to public creditors. Such a test is carried out to check whether state support in the course of restructuring proceedings is granted on market terms. It is also used to assess the conditions under which the state demands reimbursement of funds provided in the past.

In order to ascertain whether creditors, both public and private, will be satisfied to a greater extent through restructuring procedures, it is necessary to determine and compare the reduced current value of payments to creditors in connection with the implementation of the arrangement with the reduced value of funds that would be paid following the liquidation of assets. While determining the first of the compared amounts is not troublesome, as we know the amounts and schedule of repayments under the arrangement, the second amount proves more difficult to estimate. First of all, the liquidation value of the assets included in the bankruptcy estate should be established. This is an amount lower than the market value, i.e. reduced by a liquidation discount to the level of the forced sale value. Subsequently, the costs of insolvency proceedings must be compiled. The amount to be distributed is the

¹ Reference rate used to calculate the value of state aid was retrieved from: https://uokik.gov.pl/stopa_referencyjna_i_archiwum.php (accessed: 18.10.2023).

liquidation value of the assets less the anticipated costs of the proceedings. In order to assess the degree of satisfaction, it is necessary to take into account not only the nominal amount of the repaid claim, but also the time of its receipt, so the duration of the proceedings is also important. Therefore, the discounted values of projected repayments of creditors’ claims under restructuring and bankruptcy proceedings should be compared.

The follow-up stage of the project feasibility analysis in accordance with the CBA method is an economic analysis, the task of which is to answer the question of whether the restructuring deserves to be implemented from a public point of view. If, in the course of the financial viability analysis of the project, the determined NPV is lower than 0, it would mean that the project requires public support in the form of a recapitalisation of the debtor’s enterprise, a loan or a guarantee. In this case, the MEIP test should be carried out. Its purpose is to determine whether, under normal conditions, the debtor would have obtained identical financing on the free market. Additionally, on 11 August 2020, the Act on granting public aid to rescue or restructure enterprises entered into force. It contains rules on the granting of restructuring aid, i.e. support for the implementation of a restructuring plan aimed at restoring long-term market competitiveness.

Table 6. Information about the Risk in the Analysed Restructuring Plans

Risk Analysis Components	Number of Plans That Contain Data
Indication of risk areas	36
Risk classification	3
Probability of risk	22
Description of the impact of risk on cash flows	2
Expected ways of reducing the risks	9
Sensitivity analysis	2
SWOT analysis	3
Not including any data about the risk	6

Source: the author.

The last element of the project feasibility assessment is the risk analysis. An obligatory element of the restructuring plan is to provide information about the level and type of risk that may cause the restructuring to fail. The risk shall be broken down into external and internal. Each risk should be assigned the probability of its occurrence, impact, including the indication of the expected ways of reducing the risks associated with individual risks. Table 6 presents information on risks included in the examined restructuring plans.

5. Conclusion

The cost-benefit analysis method is a complete and thoroughly described procedure for examining the feasibility of projects. It has been applied in practice for years to evaluate even very large and complex projects co-financed by the European Union. It has proven to constitute a useful practical tool for clear assessment of restructuring plans submitted during restructuring proceedings. Moreover, it allows the objective, rational assessment of whether a given project is worth implementing and whether it requires public funding. This is of particular significance in view of the objectives of the restructuring proceedings, which, in addition to ensuring the payment of creditors' claims, also take particular account of other social benefits.

The primary source of information for the feasibility study is the cash flow statement. Pursuant to the applicable regulations, a restructuring plan must contain only a forecast of revenues and costs, and there is no obligation to present revenues and expenses. Unfortunately, the information on the value of the generated financial result is not reflected in the entity's payment capabilities. This is due to the accrual principle that applies when determining the accounting result. It requires that the income generated and the costs related to the revenues of the respective reporting period be included in the profit and loss account, regardless of the date of their payment. The profits generated may also be largely non-monetary in nature. In contrast, the income statement does not include cash flows that significantly affect the current and future financial situation of the entity, e.g. capital expenditures incurred, revenues resulting from obtaining external sources of financing, repayment of liabilities due to loans and financial leasing, etc. The actual inflows and outflows are presented in the cash flow statement. A restructuring plan prepared taking into account only the required elements does not allow for a reliable feasibility analysis. It should be required to supplement it with forecasts of the cash flow statement prepared in the same manner as projections of the profit and loss account. This is in the best interest of both the debtor and its creditors, and has already been pointed out by some restructuring practitioners, who include this data in the plans they elaborate.

Conflict of Interest

The author declares no conflict of interest.

Appendix

Table A.1. The Source Data and Results of the Analysis of Financial Viability and Financial Sustainability of the Examined Restructuring Plans Containing Information on Flows

Case Number	4				5			
DR (%)	4.04		4.04		4.04		4.04	
NPV ^a	4,453		56		2,329		-1,380	
IRR (%)	183.06		5.54		34.18		-79.15	
Year	CF _n (1) ^a	cCF _n (1) ^a	CF _n (2) ^a	cCF _n (2) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (2) ^a	cCF _n (2) ^a
0 ^b	-136	136	-747	747	-904	904	-904	904
1	-136	0	-136	611	-167	737	-281	623
2	285	285	-611	0	-685	52	-172	451
3	2,290	2,575	597	597	2,053	2,105	389	840
4	3,050	5,625	1,137	1,734	-1,225	880	-640	200
5	N/A	N/A	N/A	N/A	4,075	4,955	119	319
6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Case Number	6		7		25		30	
DR (%)	4.04		4.05		4.03		4.04	
NPV ^a	-2,226,007		4,924,871		388,828		2,022,749	
IRR (%)	-11.27		77.82		x ₁		36.50	
Year	CF _n (1) ^a	cCF _n (1) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (1) ^a	cCF _n (1) ^a
0 ^b	-2,431,788	2,431,788	-692,963	692,963	0	0	-307,658	307,658
1	-142,076	2,289,712	-692,963	0	128,094	128,094	-271,862	35,796
2	-1,115,127	1,174,585	972,253	972,253	8,253	136,347	560,089	595,885
3	-1,008,386	166,199	1,631,666	2,603,919	12,476	148,823	161,544	757,429
4	-68,166	98,033	4,848,770	7,452,689	16,182	165,005	-545,835	211,594
5	793,023	891,056	N/A	N/A	303,191	468,196	208,735	420,329
6	2,010,996	2,902,052	N/A	N/A	N/A	N/A	1,040,992	1,461,321
7	N/A	N/A	N/A	N/A	N/A	N/A	54,847	1,516,168
8	N/A	N/A	N/A	N/A	N/A	N/A	197,643	1,713,811
9	N/A	N/A	N/A	N/A	N/A	N/A	195,906	1,909,717
10	N/A	N/A	N/A	N/A	N/A	N/A	170,553	2,080,270
11	N/A	N/A	N/A	N/A	N/A	N/A	1,621,550	3,701,820

Table A.1 cont'd

Case Number	26				27			
DR (%)	4.03		4.03		4.03		4.03	
NPV ^a	168,192		790,740		14,624		64,912	
IRR (%)	x ₁		x ₂		29.51		103.27	
Year	CF _n (1) ^a	cCF _n (1) ^a	CF _n (2) ^a	cCF _n (2) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (2) ^a	cCF _n (2) ^a
0 ^b	0	0	0	0	-15,924	15,924	-15,924	15,924
1	29,547	29,547	29,547	29,547	40,791	56,715	40,791	56,715
2	689	30,236	-25,812	3,736	-55,486	1,230	-42,986	13,730
3	53,545	83,780	41,306	45,041	11,682	12,912	27,132	40,862
4	57,011	140,791	458,004	503,046	16,522	29,434	32,437	73,299
5	60,549	201,340	475,561	978,607	22,800	52,234	39,191	112,490
Case Number	31				38		42	
DR (%)	4.04		4.04		4.07		4.07	
NPV ^a	3,493,440		272,787		94,113		5,140	
IRR (%)	2,066.55		x ₂		x ₁		x ₁	
Year	CF _n (2) ^a	cCF _n (2) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (1) ^a	cCF _n (1) ^a	CF _n (1) ^a	cCF _n (1) ^a
0 ^b	-96,686	96,686	-96,686	96,686	0	0	0	0
1	1,979,910	2,076,595	1,785,690	1,882,375	22,044	22,044	1,204	1,204
2	2,490,080	4,566,675	-127,390	1,754,986	22,044	44,088	1,204	2,408
3	-17,779	4,548,897	-688,140	1,066,846	22,044	66,132	1,204	3,612
4	-593,363	3,955,534	-711,338	355,508	22,044	88,176	1,204	4,816
5	N/A	N/A	N/A	N/A	22,044	110,220	1,204	6,020

^a In PLN, ^b the initial outlay is equal to the cash available at the beginning of the implementation of the restructuring plan.

Notes: CF_n – period net cash flow, cCF_n – cumulated net cash flow for periods from 0 to n, DR – the adopted discount rate, x₁ – IRR not specified due to the presence of only positive flows in the forecast, x₂ – no IRR for which NPV = 0.

Source: the author.

References

Brigham, E. F. (1996). *Podstawy zarządzania finansami*. PWE.

Bogucki, D. (2016). *Studium wykonalności. Poradnik*. Presscom.

Directive (EU) 2019/1023 of the European Parliament and of the Council of 20 June 2019 on preventive restructuring frameworks, on discharge of debt and disqualifications, and on measures to increase the efficiency of procedures concerning restructuring, insolvency and

discharge of debt, and amending Directive (EU) 2017/1132 (Directive on restructuring and insolvency). Official Journal of the European Union, L 172/18.

Dynus, M., Kołosowska, B., & Prewysz-Kwinto, P. (2005). *Analiza finansowa przedsiębiorstwa*. TNOiK.

European Commission. (2015). *Guide to Cost-Benefit Analysis of Investment Projects: Economic Appraisal Tool for Cohesion Policy 2014–2020*.

Hall, J. A. (2011). *Accounting Information Systems* (7th ed.). South-Western Cengage Learning.

Hrycaj, A. (2015). Cztery postępowania restrukturyzacyjne. *Doradca Restrukturyzacyjny*, 1.

Hrycaj, A., & Filipiak, P. (Eds). (2017). *Prawo restrukturyzacyjne. Komentarz*. Wolters Kluwer.

Projekt ustawy o zmianie ustawy – Prawo restrukturyzacyjne oraz ustawy – Prawo upadłościowe [Draft Act amending the Restructuring Law and Bankruptcy Law]. Retrieved from: <https://legislacja.rcl.gov.pl/docs//2/12361503/12891108/12891109/dokument563629.pdf> (accessed: 18.10.2023).

Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006. Official Journal of the European Union, L 347/320.

Sierpińska, M., & Jachna, T. (2004). *Ocena przedsiębiorstwa według standardów światowych*. Wydawnictwo Naukowe PWN.

Ustawa z dnia 28 lutego 2003 r. Prawo upadłościowe i naprawcze [Act of 28 February 2003 – Bankruptcy and Rehabilitation Law (Journal of Laws of 2003, No. 60 item 535)].

Ustawa z dnia 15 maja 2015 r. Prawo restrukturyzacyjne [Act of 15 May 2015 – Restructuring Law (Journal of Laws of 2015, item 978)].

Ustawa z dnia 16 lipca 2020 r. o udzielaniu pomocy publicznej w celu ratowania lub restrukturyzacji przedsiębiorców [Act of 16 July 2020 on granting public aid to rescue or restructure enterprises (Journal of Laws of 2020, item 1298)].

Witosz, A. (Ed.). (2010). *Prawo upadłościowe i naprawcze. Komentarz*. LexisNexis.

Zaremba, U. (2022). The Legal Restructuring Framework in Poland: Does It Help Indebted Enterprises Avoid Bankruptcy? *International Insolvency Review*, 31(1), 129–146. <https://doi.org/10.1002/iir.1445>

Zimmerman, P. (2020). *Prawo upadłościowe. Prawo restrukturyzacyjne. Komentarz*. C.H. Beck.

KREM, 2025, 1(1007): 127–146
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18619>

Do Consumers Want to Create Shared Values? Building Trust in Times of Whitewashing

Joanna Lemańczyk¹, Magdalena Stefańska²

¹ Poznań University of Economics and Business, Doctoral School, Niepodległości 10, 61-875 Poznań, Poland, e-mail: joanna.lemanczyk@phd.ue.poznan.pl, ORCID: <https://orcid.org/0000-0002-6195-8568>

² Poznań University of Economics and Business, Institute of Management, Department of Strategic Management, Niepodległości 10, 61-875 Poznań, Poland, e-mail: magdalena.stefanska@ue.poznan.pl, ORCID: <https://orcid.org/0000-0002-2620-9617>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Lemańczyk, J., & Stefańska, M. (2025). Do Consumers Want to Create Shared Values? Building Trust in Times of Whitewashing. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 127–146. <https://doi.org/10.15678/krem.18619>

ABSTRACT

Objective: This article looks at consumer behaviour in the fast-moving consumer goods (FMCG) market in response to actions undertaken by organisations to create shared value. The main objectives of the paper are twofold: to explore the concept of creating shared value (CSV), and explain the forces at work on the demand side that encourage willingness to participate in support activities. The study also identifies stimuli and inhibitors that act as motivators and constraints in the creation of shared value.

Research Design & Methods: A qualitative research approach is adopted to accomplish the research objectives. Drawing on individual deep interviews (IDI), the authors identify the understanding, perception and expectations of potential customers toward the concept of CSV. The research group was selected in terms of people who are or were economically active and provided their households with daily (fast-moving products) shopping. Age was a criterion for dividing the participants of the focus group.

Findings: The concept of CSV is not widely recognised. While the creation of shared value is often referred to by different names and partially overlaps with tools from the field of socially

responsible marketing (such as cause-related marketing – CRM), a deeper examination of CSV reveals key differences, particularly in its much broader consideration of the role of shared value creation across the organisation, rather than being confined to a single functional area. Additionally, CSV is generally looked upon in a positive light. The primary motivating factor for consumers' involvement is the selection of the target group of beneficiaries. The request for a detailed report on aid provided, demonstrating the organiser's credibility (supply side), remains unaddressed. Moreover, there is a suggested "fair mark-up" of 10–20% on the product's base price linked to the amount donated. Additionally, identified inhibitors act as constraints in the creation of CSV. As the key inhibitor factor seems to be lack of trust resulting from organisations' greenwashing or whitewashing practices, which implicates a tool-based approach to CSV rather than a strategic one.

Implications/Recommendations: The selected research method (IDI) allows the authors to explore the issue and identify the factors that prevent respondents from undertaking business initiatives toward creating shared value. Furthermore, the tool-based approach to CSV is important for increasing the organisation's visibility. Therefore, it is necessary for future research to validate these findings through quantitative studies, considering both the corporate and functional levels of organisational management.

Contribution: The article sheds light on the perception of CSV on the demand side and the factors influencing consumer willingness to participate in its creation. Additionally, our examination of the literature reveals that the flexible structure of CSV allows for extensive interpretative freedom in understanding the concept. This paper contributes to the discussion on CSVs, pointing out definitional similarities with CRM and highlighting factors that increase consumers' willingness to engage with organisations or discourage them from doing so. In particular, we find that respondents emphasised one factor in particular – the type of beneficiary. In addition, trust in the organisation and its brand mitigates any potential doubts. The article emphasises the potential to build trust in organisations by actively involving stakeholders in their CSV development processes.

Article type: original article.

Keywords: creating shared value (CSV), cause-related marketing (CRM), CSV inhibitors, CSV stimuli, IDI.

JEL Classification: M14, M31, L14, D91, Q56.

1. Introduction

As is so often the case with concepts that are complex, multidimensional and difficult to measure or clearly define, there is an ongoing and lively debate in the literature on how to approach creating shared value (CSV). Many studies on CSV have focused on conceptualising the term (Leandro & Neffa, 2012; Dembek, Singh & Bhakoo, 2016), developing methodologies to study it (Porter *et al.*, 2011; Cuevas Lizama & Royo-Vela, 2023; Wadesango, 2023), examining the benefits for those who use it (Trujillo, 2018), and exploring the tools used in the CSV process (Jones

& Wright, 2018; Karwowska, 2021). Other research has challenged the arguments put forth by the progenitors of CSV (Crane, *et al.*, 2014; Beschorner & Hajduk, 2017). However, these studies do not provide clear answers to critical questions, such as what would motivate stakeholders to engage more deeply and for longer periods; which areas of collaboration would be most attractive; and what factors particularly discourage key stakeholders – especially consumers – from engaging and sharing their resources (e.g., time, material goods, knowledge, money). Several issues remain unresolved, including determining the degree of stakeholder involvement, selecting areas of interest, and addressing objections to maximising participation and shared benefits.

The creation of shared value is ever more often explored in the literature. The discussion initiated by Porter and Kramer (2011) on combining economic and social value (and supported by Freeman's (2010) stakeholder theory, which posits that organisations must consider the needs of various stakeholder groups in their activities) encourages further exploration of this issue. This discussion is especially pertinent given the growing demand for concepts that promote social well-being and quality of life amidst the climate crisis and war. According to Porter and Kramer, all participants in the value chain are connected to different stakeholders and have the opportunity to contribute to the creation of shared value (Porter & Kramer, 2006, 2011). This value, depending on where it is created and which stakeholders are involved, can include the sharing of knowledge and experience, the co-creation of technology, process, product or marketing innovations, or the combination of tangible and intangible resources to create value that can become a new resource or competence for the collaborating organisations (Bachnik *et al.*, 2024). Under the concept of social value, shared value goes beyond the organisation and is created for the common good (a benefit to the community or society). This value aims to improve the quality of life and increase individual well-being. To summarise, the creation of shared value requires the participation of different actors – donors, beneficiaries and intermediaries – who redistribute the value created, be it financial, tangible or intangible.

The present article discusses CSV and its meaning in relations with stakeholders. It is organised as follows: We first provide an overview of research on CSV published in academic journals. The summary includes the research questions. This is followed by a presentation of the methodology of the study and the results of the study. Limitations and further research directions are outlined in the conclusion.

2. Creating Shared Value (CSV) – Theoretical Foundations

Organisations have extensive experience in creating shared value through cause-related marketing (CRM), a tool derived from corporate social responsibility

(CSR) and responsible marketing. CRM activities typically result in the creation of shared value, often financial, generated from consumer purchases. This value is then amplified by the organisation's resources and transferred to beneficiaries (Paliouras & Siakas, 2017; Shukla & Pattnaik, 2019). However, CRM differs from CSV in several key respects. CRM is usually targeted at consumers, encouraging them to participate in short-term initiatives that are closely tied to marketing or CSR strategy. In contrast, CSV transcends these limitations; it is neither piecemeal nor merely operational or tactical from an organisational perspective. CSV is integrated into the overall strategy of the organisation and involves both strategic and investment-related processes. It addresses social issues that are directly related to the company's core business and, unlike CSR, treats these issues as opportunities that can potentially benefit the company (Wójcik, 2016).

Like CRM, CSV also includes fundamental collaborative elements that define the process of creating shared value. These elements include:

- enriching the brand (organisation) with additional, usually universal values,
- gaining resources (values) for the beneficiaries specified in the proposed activities,
- resources come from both consumers and the organisation,
- donors commit financial resources, as well as, potentially, time and material goods,
- an organisation, usually an NGO, assists in redistributing the funds raised,
- there is information on the product or in advertisement about purposes of the fundraising,
- activities targeted at beneficiaries may be short term, although they may be part of an overall long-term value-creation strategy,
- communicating the results (value created) to donors.

At the same time, a few important features of CSV differentiate it from CRM:

- the integration of CSV into the organisation's strategy and business model,
- the long-term cooperation with stakeholders,
- the organisation's investment approach to creating shared value,
- the involvement of various stakeholders in the collaboration,
- the establishment of networks for collaboration and to boost the impact of CSV.

A review of the literature reveals that CSV issues continue to attract researcher interest (de los Reyes, Scholz & Smith, 2017; Chen *et al.*, 2020; Crous & van Wyk, 2021; Menghwar & Daood, 2021; Chen, Wang & Li, 2023). According to Dembek, Singh, and Bhakoo (2016), nearly 400 articles have contained the phrase "CSV" in scientific journals in the 21st century. As of August 11, 2024, the phrase "shared value" had appeared in 5,305 documents (all articles on Business, Management, and Accounting) in the Scopus database. Further, in the Web of Science (WoS) database, there were 17,946 documents, with 2,228 of them containing the phrase in

their titles. Authors of those articles used “shared value” in the same meaning as that proposed by Porter and Kramer (2006, 2011). Porter and Kramer (2011, p. 66) defined shared value as “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates.” They outline three primary methods for creating shared value: reconceiving products and markets, redefining productivity within the value chain, and fostering local cluster development. These activities are fundamental to the business strategy and focus on generating economic value while concurrently addressing social needs and challenges. CSV activities include both an image-building strategy for the company and, in the long run, are beneficial for society (Awale & Rowlinson, 2014). The literature review yielded a wide range of definitions (Table 1).

Table 1. Definition of Shared Values

Authors (Year)	Definition
See (2009)	Choices that benefit both society and corporations that arise out of the “mutual dependence of corporations and society”
Porter & Kramer (2011)	Policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates
Maltz, Thompson & Jones Ringold (2011)	Consider the shared value of multiple stakeholders instead of focusing solely on the firm’s value
Verboven (2011)	Creation of value not only for shareholders but for all stakeholders
Driver (2012)	The ability to simultaneously create economic value and social/societal benefits
Dubois & Dubois (2012)	Creating organisational value while simultaneously adding value to society and to the environment
Fearne, Garcia-Martinez & Dent (2012)	Value that is mutually beneficial to both the value chain and society
Maltz & Schein (2012)	A global commercial organisation’s initiative to simultaneously create value for shareholders and the communities in which the firm operates, beyond the efforts required by law
Pirson (2012)	Balancing the creation of social and financial value
Shrivastava & Kennelly (2013)	The simultaneous creation of economic value for the firm and social and environmental value for the places where it does business
Pavlovich & Corner (2014)	Putting social and community needs before profit
Tempels, Blok & Verweij (2017)	Value as shared responsibility for the common good

Source: the authors, based on Dembek, Singh & Bhakoo (2016).

The definitions in Table 1 underscore the significance of mutual cooperation among stakeholders to create value and expand corporate goals to involve multiple stakeholder groups. This aligns with the concepts of corporate responsibility (Carroll, 1979) and stakeholder theory (Freeman, 2010).

In the realm of shared values, the concept of “common value” requires co-creation, as advocated by Sagawa and Segal (2000), who propose expanding traditional corporate philanthropy as a percentage of revenue. From the customer’s perspective, sharing involves giving up ownership for access to goods. In the sharing economy, the right to use a good is shared, with specific property rights distributed among actors in the network. “Common value” emerges from this right to share (Reuschl *et al.*, 2022). This “common value” can also result from shared value, involving multiple stakeholders, with benefits extending beyond the involved parties to potentially include a third party.

Companies adhering to stakeholder theory and corporate social responsibility, as outlined by Freeman (2010) and Carroll (1979), prioritise stakeholder well-being for the organisation, society, and the environment. In CSV, participation involves customers, employees, and companies, benefiting specific societal or environmental groups. Contributions to shared value (SV) may include financial or material support, driven by intrinsic and extrinsic motives. The anticipated outcomes are intended to meet the needs of beneficiaries or partially address social or ecological issues, though precise results may remain unknown due to gaps in the CSV process. Menghwar and Daood (2021) note the absence of a single universal approach to creating CSV, influenced by multiple external and internal factors shaping a firm’s ability to effectively pursue a CSV strategy. This typically stems from the firm’s initiatives, reflecting a redefined focus on societal or environmental objectives.

3. Method of Research

The above considerations on CSV gave rise to the formulation of the following research questions:

RQ1: How are shared values understood/interpreted by consumers?

RQ2: Which beneficiaries are most likely to be financially supported by consumers? (Why certain beneficiaries are more willingly supported?).

RQ3: Which factors influence consumers’ willingness to purchase products involved in the CSV campaign, and which discourage them?

RQ4: What would influence consumers’ willingness to buy a product marked as participating in a CSV campaign?

Individual in-depth interviews provided participants with the opportunity to express themselves fully and explore the subject thoroughly. To ensure a diverse perspective, we intentionally selected respondents based on age and gender, recog-

nising that focusing solely on one age group could introduce bias. The decision to maintain a balanced gender representation was made with the emotional context of the subject in mind. For accurate sample definition, an online survey (specifically, a recruitment questionnaire) was crucial. The attached recruitment questionnaire, titled “Willingness to purchase FMCG products participating in CSV, by Polish consumers,” assisted in selecting participants for subsequent in-depth interviews. The author envisions two potential paths based on the questionnaire:

- 1) catching people responsible for grocery shopping in their household,
- 2) eliminating people who are not responsible for providing their family with groceries.

Table 2. The IDIs Samples for Food Buyers in Poland (May 2022)

Respondent	Age (Years)	Sex	Purchase Decision for the Household (Yes/No)	Professional Activity
1	23	male	yes	active
2	25	female	yes	active
3	26	female	yes	active
4	26	male	yes	active
5	27	male	yes	active
6	27	female	yes	active
7	29	female	yes	active
8	31	male	yes	active
9	32	male	yes	active
10	32	female	yes	active
11	40	male	yes	active
12	41	female	yes	active
13	42	male	yes	active
14	49	female	yes	active
15	51	female	yes	active
16	52	male	yes	active
17	52	male	yes	active
18	60	female	yes	active
19	70	female	yes	retiree
20	71	male	yes	retiree
21	75	female	yes	retiree

Source: the authors.

The research, approved by the Research Ethics Committee (no. 15/2022) of the Poznań University of Economics and Business, involved a deliberate selection of respondents based on a pre-survey online questionnaire (Table 2). Subsequently, in-depth interviews were conducted with 21 individuals across various ages and genders, as detailed in Table 2. The sample size is sufficient, particularly if the researcher observes that interviews are failing to bring new views on the issue (Olejnik & Stefańska, 2022).

4. Results of Research

The study looked at CSV, exploring its integration into participants' perceptions and their readiness to engage in creating shared value. As the term CSV is not widely recognised, questions were designed to address specific aspects of it. To explore respondents' associations: RQ1: How are shared values understood/interpreted by consumers? (Fig. 1).



Fig. 1. Word Cloud to Keyword “Shared Values”

Source: the authors.

A key issue was to clarify how the term “shared values” is understood. The associations presented lead to the conclusion that shared value has both positive and negative connotations, and it is interpreted in the context of the entity – the organisation and consumers, e.g.: “working together for a common goal,” “producing mutual benefits,” “pursuing a common goal,” “people and business helping those in need,” “drawing attention to important (social) problems,” “common value created by all,” “together we can do more.” Moreover, the analysis highlights the role of two key parties involved in the CSV process – consumers and organisations. The second key insight concerns value (Table 3).

Shared values, even in marketing, can carry negative connotations, often rooted in scepticism regarding the credibility of an organisation’s activities. This scepticism arises from a lack of trust stemming from participants in shared value creation not receiving feedback on the outcomes of their involvement (Stefańska & Pilarczyk, 2015). Such scepticism is evidenced by statements such as: “marketing bullshit,” “increasing company profits,” “empty declarations of support,” “ambitious plans, mediocre execution.”

Table 3. Breakdown of Associations for the Keyword “Creating Shared Value”

Subject	Connotations
Organisation	<ul style="list-style-type: none"> – social campaigns – company action for the community – marketing bullshit – increasing company profits through empty pledges of support – ambitious plans, poor execution – marketing campaigns – corporate image building
Consumer	<ul style="list-style-type: none"> – responsible shopping with the support of a target – customer can be with us as we support those in need
Organisation and consumer	<ul style="list-style-type: none"> – business helps make goals a reality – producing mutual benefits for the parties – working towards a common goal – people and business come together to help those in need – participation in a mutually beneficial business, not just one – working together to improve the lives of others
Values	
Communitarianism	<ul style="list-style-type: none"> – creating benefits for society as a whole – shared value created by all – helping other people – society, justice, fair play
Work	<ul style="list-style-type: none"> – working together towards a common goal – working together in solidarity and with integrity
Meaning	<ul style="list-style-type: none"> – drawing attention to important (social) issues – making the product more relevant – together we can do more – let’s help together – every little bit helps – helping together by buying
Planet (environment)	<ul style="list-style-type: none"> – joint environmental activities

Source: the authors.

Demand-side participation in co-creation activities for corporate initiatives focuses on clear outcomes and minimising redundant activities. Emphasising this

involvement in CSV, CSR, and aspects of environmental, social, and governance (ESG) aligns with ethical social marketing principles (Domegan *et al.*, 2013).

Another issue discussed was the identification of preferred beneficiaries of shared value. The authors showed the respondents a scattering of slogans. The respondents were also given the opportunity to add their own types of beneficiaries, in order to minimise the chance that the options given were favoured.

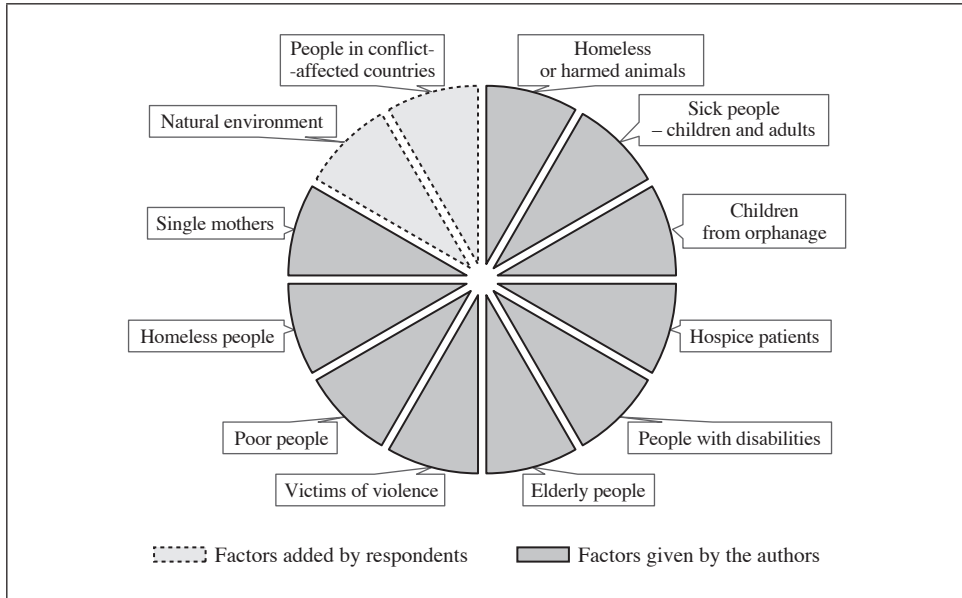


Fig. 2. Selection of the Beneficiaries

Source: the authors.

Figure 2 displays the chosen beneficiary groups by respondents. The solid-lined groups were the options provided, while the dotted-lined ones were added by participants. However, the figure does not represent the distribution of votes for the most frequently selected beneficiaries. The top three most supported goals by participants were determined from overall scores across all IDI groups. This ranking, based on respondent points, was intended to highlight the most significant objectives for different age groups and present the complete beneficiary ranking from all participants in the focused in-depth interviews. This led to the answer on the research question RQ2: Which beneficiaries are most likely financially supported by Polish FMCG consumers? (Table 4).

The qualitative research was also designed to outline the direction of future considerations. For the group surveyed in the IDI, in the overall ranking (without

age distinction), homeless and disadvantaged animals were the groups most likely to be supported. This was followed by the sick without distinction between children and adults and, third, children in foster care. The literature on the subject shows the difference between many factors determining the choice of charitable purpose. Authors have pointed to characteristics such as gender, age, political leaning and religiosity (Chapman *et al.*, 2024). They note that large divergences were observed between men and women when evaluating political, sport, animal protection, culture and arts, and social service charities. Other studies confirm that women are more likely to support animal charities (Srnlka, Grohs & Eckler, 2003; Piper & Schnepf, 2008), while men are more likely to support political charities (Showers *et al.*, 2011; McMahon, Sayers & Alcantara, 2023) and sports charities (Piper & Schnepf, 2008). In the qualitative study carried out (Table 4), these groups’ dependency on others was identified as the main reason people are more willing to support them. These groups are not in a position to take care of their own well-being, and they are unable to change their living conditions themselves.

Table 4. Selection of the Most Frequently Indicated Beneficiaries

Specification	18–29 years	30–49 years	+50 years
1	Sick people – children and adults	Homeless or harmed animals	Sick people – children and adults
2	Children from orphanage	Sick people – children and adults	Children from orphanage
3	Homeless or harmed animals	Hospice patients	Homeless or harmed animals

Source: the authors.

Another issue developed in the research refers to motivation. Participants in the survey repeatedly stressed the issue of the credibility of both the target campaign and its organisers. There is no doubt that any previously documented pro-social activities appealed to them for truthfulness and were a reason for their willingness to get involved in the campaign. PF2: “It all depends on the goal and the company’s image. Feedback would encourage me to be more active, it would be proof that the company is not cheating.” Reporting on the results of the activities carried out is an essential element. However, respondents do not expect a financial report – evidence in the form of a video document or proof of a bank transfer would suffice. PM9: “If I support a company that has promised to help, I check whether it has actually accounted for its declaration (local companies in particular are easy to check). I verify whether the company posted a summary of the actions carried out, shared a photo or video materials or reports.” Even for the technologically excluded, verifying the credibility of an organiser is not a challenge in today’s information-rich

world. Crucially, consumers' willingness to co-create shared value with a company often hinges on the purpose behind the action. This led to the conclusion that the type of beneficiaries may have an impact on decision to engage in CSV, but, surprisingly, the respondents do not expect strong proof to validate the organisation's intention.

The willingness to buy a product involved in a CSV campaign depends on the abovementioned variables related to consumer behaviour as well as popular opinion about the producer. Respondents talked about what the organiser of the campaign should strive to do. It is essential that the campaign indicate not only the product being featured and its contribution to the value of the campaign, but also indicate which is from the regular collection and does not benefit any social group (GF21): "When I go shopping, I often can't tell if a product is involved in an action or not. Signage should be visible enough for the shopper to be in no doubt."

Another issue is that of a "fair mark-up" is a second crucial consideration (PM4): "It is about the relationship between the price of the product and the percentage added for doing good. If the mark-up is reasonable, within the limit of 10%, maximum 20% then if the purpose is close to me, I am happy to support such campaigns." Otherwise, respondents declared that they would not pay additional costs; and that if the cause seemed particularly important to them and the producer set a far too high price, then they would prefer to look for a foundation or a worthy cause themselves (via the Internet or television) and would be willing to make a one-off payment. This led us to the answer on RQ4.

All of the study's respondents agreed that the company involved in the aid should report the effects of the aid. PF15: "I would expect proof from the company that something was happening or that what was assumed, what I was trying to do, was realised. It can be a financial report – or a movie document."

The main source of information is the Internet, which can pose obstacles for the older interlocutors. Moreover, the interviewees expressed their willingness to pay the company that organises help for the beneficiaries (PM8): "The organisers of the campaign and people who care about its success should be rewarded because they are carrying out additional activities. It is good to tell the truth from the beginning as you avoid suspicion of greenwashing and marketing manipulation. When a company plays with an open hand, trust in it grows." Considering the individual components that make up CSV, such as reformulating the product to generate shared value for society or involving several parties in the co-creation process, it is likely that survey participants are willing to buy CSV-branded products.

Their involvement most strongly depends on the purpose of the collection (PM11): "I think that my commitment always depends on the goal of the campaign and the type of products, the quality of which cannot be worse. Taking into account rising inflation, I would make my aid dependent on the final price of the product.

If the product was close to my heart, then I might help. Especially when it comes to a single product.”

5. Discussion of Results

Monetarists, such as Friedman and Friedman (1994), contend that money is the essence of value and purchasing power. Prices, accordingly, determine the value of goods (Economakis & Milios, 2019). In contrast, the Austrian School, led by Ludwig von Mises (Grassl, 2017), challenges this view, shifting the paradigm by tying value to consumers’ psychological needs and satisfaction. Menger’s (Landreth & Colander, 1998) emphasis on consumer satisfaction, not just goods or labour, aligns with this perspective. CSV is intended to establish common value between business and society (Yoon, Gürhan-Canli & Schwarz, 2006; Park, 2020). The involvement of three key parties – companies, clients, and beneficiaries – is crucial for successful shared value creation (Lemańczyk & Szymkowiak, 2023). While CSV may demand significant initial investment and time, it differs from traditional charity actions, emphasising the formulation of a strategic approach (Grzegorzczuk, 2022).

The discussion on CSV in the literature and the explorative research brings another vision of the role of business, its relations with stakeholders and the collaboration among networks of organisations. CSV encourages companies to adopt a reflective approach from the outset, and to be proactive rather than reactive (Rajarajeswari & Srinivasan, 2021). Respondents associated the concept of creating shared value with responsible business by listing their individual associations. Based on this information, a word cloud was created and the most frequently mentioned terms highlighted.

Although respondents did not explicitly differentiate between the concepts, by naming the key elements they considered most important, they suggested that the role of integrated value creation (IVC) is growing. This concept represents a development that bridges the gap between CSV and CSR and extends the approach of creating value for all stakeholders.

In addition, modern marketing focuses on value creation by involving consumers not only in product development, promotion and purchase, but also in shaping shared value through their participation in meaningful initiatives related to product choice.

All this leads to the conclusion that CSV promises a more integrated approach than CRM or responsible marketing. It ultimately yields increased economic value and strategic advantages for both business and society (Park, 2020). Despite the term remaining fairly unknown, its focus is founded upon the creation of common value. Importantly, the research emphasises the tangible evidence of causality in action over the specific nomenclature. The qualitative research echoes this by revealing consumers’ willingness to pay more for “added value,” especially the

opportunity to contribute to shared value. A “fair mark-up” for the sake of charity is also suggested, highlighting the consumers’ focus on perceived value and its connection to a product’s utility.

In response to a wide scope of consumers’ motives, entrepreneurs using various marketing techniques when initiating outreach activities may want to reduce the role of guilt, even if it does remain an effective tool in building a positive image (Janeczek, 2010). Guilt leads to whitewashing, whereby companies portray ethical images while hiding unethical practices, encompassing greenwashing and social justice washing (Ho, 2015). Although greenwashing is prevalent in the food and cosmetics industries, whitewashing is used less often, likely due to a stronger focus on environmental concerns driven by global warming (Mazurkiewicz-Pizło & Pizło, 2018). According to Pomeroy and Johnson (2009), greenwashing is deliberately exercising deception to whitewash consumers towards the false or vague green claim involving a product or corporate image. Green- and whitewashing often appear when a company uses individual pro-social or pro-environmental actions to shape its image – while its everyday practices fail to confirm the same commitment (Burchard-Dziubińska, Rzeńca & Drzazga, 2014). Social impact, often linked to promotional charity activities, tends to prioritise image improvement over genuine social welfare efforts (Soroka & Mazurek-Kusiak, 2014).

The fear of trusting organisations that may not deliver on their promises of shared value creation is a significant barrier to consumer engagement. This highlights the need for an integrated approach to CSV – not only through targeted activities but also by embedding shared value into the organisation’s very core, including its strategy (Maltz & Schein, 2012; Menghwar & Daood, 2021), organisational culture, and product brand DNA. These elements are essential in shaping the organisation’s identity and building its reputation. And, although Porter and Kramer (2011) concept of CSV has come in for criticism for multiple reasons – a lack of integrity, its tendency to reduce sustainability to resource efficiency and proposing prosocial solutions just for the benefit of doing so, it still sheds new light on these phenomena. This model continues to generate debate and the need for further exploration.

6. Limitations and Future Research

To more thoroughly examine the issue of shared value creation, a literature analysis was carried out. It helped identify developments and scientific interpretations of CSV. In the absence of strict CSV metrics, there is room for interpretation, and a qualitative study was planned to explore the perspective of the demand side. The research method we chose, IDI, enabled us to diagnose the problem and examine its development. However, quantitative research will be required to verify

the findings. Because the term CSV remains obscure for many, the survey asked about its specific characteristics. This was done so that the lack of familiarity would not lead to a change in respondents' activity. Participants were also asked what they understand CSV to be and whether they have negative or positive associations. The study participants permanently reside in Poland, and are representatives of specific age cohorts. Representative results will be obtained in the future by means of an online survey based on the results of qualitative research.

It is worth adding here that Porter and Kramer's (2011) concept of CSV is clear but has come in for widespread criticism. Their understanding of shared value lacks originality, ignores tensions between social and economic goals, and offers a shallow understanding of the role of business in society as well as challenges of business compliance (Crane *et al.*, 2014). Dembek, Singh and Bhakoo (2016) posited a need to further develop the concept, measure the methods and scope involved, and consider its broader impacts (both in terms of costs and benefits) of shared value and the use of multi-stakeholder data. Therefore, ontological issues remain important, as does consideration of the scope of actors in creating shared value (the types of stakeholders involved) to co-create value with the organisation. We believe that other areas in need of further exploration areas include the motives for participating in CSV and building trust for sustainable collaboration.

7. Conclusions

The qualitative research presented here shows that CSV is not widely known, but people have largely positive associations. Negative associations concern mainly unfair practices and may result in a lack of trust in a campaign's organisers (the supply side). The most important factor that motivates consumers to get involved in a campaign is the choice of beneficiary. The homeless and disadvantaged animals were most frequently indicated as beneficiaries for help, followed by the sick without distinction between children and adults, and children in foster care. The primary reason these groups are supported is that they rely on others for their well-being and lack the means to themselves improve their living conditions. Respondents were willing to engage in creating shared value on the condition of reputable organisers and subsequent public reporting of results. These need not necessarily be financial statements, but any documented proof. Additionally, they indicated that a mark-up of 10% to a maximum of 20% was fair – that is, on par with a good tip for service in a restaurant. This article will serve as a prelude to quantitative research, outlining a path for advancing CSV. Future plans include validating a model determining consumers' willingness to participate in co-creating value support actions.

Authors' Contribution

The authors' individual contribution is as follows: Joanna Lemańczyk 80%, Magdalena Stefańska 20%.

Conflict of Interest

The authors declare no conflict of interest.

References

- Awale, R., & Rowlinson, S. (2014). A Conceptual Framework for Achieving Firm Competitiveness in Construction: A 'Creating Shared Value' (CSV) Concept. In: A. B. Raiden, E. Aboagye-Nimo (Eds), *Proceedings of the 30th Annual ARCOM Conference* (Vol. 2) (pp. 1285–1294). 1–3 September 2014, Portsmouth, UK. Association of Researchers in Construction Management.
- Bachnik, K., Kaźmierczak, M., Rojek-Nowosielska, M., Stefańska, M., & Szumniak-Samolej, J. (Eds). (2024). *Social Impact, Organizations and Society: The Contemporary Role of Corporate Social Responsibility*. Taylor & Francis.
- Beschorner, T., & Hajduk, T. (2017). Creating Shared Value. A Fundamental Critique. In: J. Wieland (Ed.), *Creating Shared Value – Concepts, Experience, Criticism* (Vol. 5) (pp. 27–37). Springer. https://doi.org/10.1007/978-3-319-48802-8_3
- Burchard-Dziubińska, M., Rzeńca, A., & Drzazga, D. (2014). *Zrównoważony rozwój – naturalny wybór*. Wydawnictwo Uniwersytetu Łódzkiego. <https://doi.org/10.18778/7969-090-9>
- Carroll, A. B. (1979). A Three-dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review*, 4(4), 497. <https://doi.org/10.2307/257850>
- Chapman, C. M., Dixon, L., Wallin, A., Young, T., Masser, B. M., & Louis, W. R. (2024). We Usually Give Like This: Social Norms Describe Typical Charitable Causes Supported by Group Members. *Nonprofit and Voluntary Sector Quarterly*, 53(1), 29–53. <https://doi.org/10.1177/08997640231160467>
- Chen, X., Wang, C., & Li, S. (2023). The Impact of Supply Chain Finance on Corporate Social Responsibility and Creating Shared Value: A Case from the Emerging Economy. *Supply Chain Management*, 28(2), 324–346. <https://doi.org/10.1108/SCM-10-2021-0478>
- Chen, Y. R. R., Hung-Baescke, C. J. F., Bowen, S. A., Zerfass, A., Stacks, D. W., & Boyd, B. (2020). The Role of Leadership in Shared Value Creation from the Public's Perspective: A Multi-continental Study. *Public Relations Review*, 46(1), 101749. <https://doi.org/10.1016/j.pubrev.2018.12.006>
- Crane, A., Palazzo, G., Spence, L. J., & Matten, D. (2014). Contesting the Value of "Creating Shared Value". *California Management Review*, 56(2), 130–153. <https://doi.org/10.1525/cm.2014.56.2.130>
- Crous, C., & van Wyk, M. C. (2021). Balancing Quantitative and Qualitative Value-creation Reporting. *South African Journal of Economic and Management Sciences*, 24(1), a3936. <https://doi.org/10.4102/sajems.v24i1.3936>

- Cuevas Lizama, J., & Royo-Vela, M. (2023). Implementation and Measurement of Shared Value Creation Strategies: Proposal of a Conceptual Model. *Business Strategy and Development*, 6(4), 598–609. <https://doi.org/10.1002/bsd2.265>
- de los Reyes, G., Jr., Scholz, M., & Smith, N. C. (2017). Beyond the “Win-win” Creating Shared Value Requires Ethical Frameworks. *California Management Review*, 59(2), 142–167. <https://doi.org/10.1177/0008125617695286>
- Dembek, K., Singh, P., & Bhakoo, V. (2016). Literature Review of Shared Value: A Theoretical Concept or a Management Buzzword? *Journal of Business Ethics*, 137(2), 231–267. <https://doi.org/10.1007/s10551-015-2554-z>
- Domegan, C., Collins, K., Stead, M., McHugh, P., & Hughes, T. (2013). Value Co-creation in Social Marketing: Functional or Fanciful? *Journal of Social Marketing*, 3(3), 239–256. <https://doi.org/10.1108/JSOCM-03-2013-0020>
- Driver, M. (2012). An Interview with Michael Porter: Social Entrepreneurship and the Transformation of Capitalism. *Academy of Management Learning and Education*, 11(3), 421–431. <https://doi.org/10.5465/amle.2011.0002a>
- Dubois, C. L. Z., & Dubois, D. A. (2012). Expanding the Vision of Industrial-organizational Psychology Contributions to Environmental Sustainability. *Industrial and Organizational Psychology*, 5(4), 480–483. <https://doi.org/10.1111/j.1754-9434.2012.01482.x>
- Economakis, G., & Milios, J. (2019). The Working Class and the Middle Classes in the Greek Economic Crisis: Allies in a Common Anti-neoliberal Strategy? *International Critical Thought*, 9(2), 177–193. <https://doi.org/10.1080/21598282.2019.1613164>
- Fearne, A., Garcia Martinez, M., & Dent, B. (2012). Dimensions of Sustainable Value Chains: Implications for Value Chain Analysis. *Supply Chain Management*, 17(6), 575–581. <https://doi.org/10.1108/13598541211269193>
- Freeman, R. E. (2010). *Strategic Management: A Stakeholder Approach*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139192675>
- Friedman, M., & Friedman, R. (1994). *Wolny wybór*. Wydawnictwo Panta.
- Grassl, W. (2017). Toward a Unified Theory of Value: From Austrian Economics to Austrian Philosophy. *Axiomathes*, 27(5), 531–559. <https://doi.org/10.1007/s10516-017-9348-0>
- Grzegorzczak, W. (2022). The Application of CSR and CSV Concepts in Company Marketing Activities. *Problemy Zarządzania*, 20(3/97), 109–126. <https://doi.org/10.7172/1644-9584.97.6>
- Ho, T. H. (2015). Social Purpose Corporations: The Next Targets for Greenwashing Practices and Crowdfunding Scams. *Seattle Journal for Social Justice*, 13(3), 14.
- Janeczek, U. (2010). Wpływ zachowań nabywczych konsumentów na zmianę zachowań rynkowych przedsiębiorstw w kontekście koncepcji społecznej odpowiedzialności. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Problemy Zarządzania, Finansów i Marketingu*, 15, 123–134.
- Jones, S., & Wright, C. (2018). Fashion or Future: Does Creating Shared Value Pay? *Accounting & Finance*, 58(4), 1111–1139. <https://doi.org/10.1111/acfi.12243>

- Karwowska, E. (2021). Creating Shared Value by the University. *Social Responsibility Journal*, 17(1), 30–47. <https://doi.org/10.1108/SRJ-05-2019-0172>
- Landreth, H., & Colander, D. C. (1998). *Historia myśli ekonomicznej*. Wydawnictwo Naukowe PWN.
- Leandro, L., & Neffa, E. (2012). Is the Integration of Shared Value Creation (SVC) with Strategy Management of Productive Organizations an Innovative Approach to Environmental Challenges Faced by Companies Today? *International Journal of Business Management and Economic Research*, 3(2), 484–489.
- Lemańczyk, J., & Szymkowiak, A. (2023). A Decade of Research on Creating Shared Value Conception: A Structured Systematic Review and Future Research Avenues. *Scientific Papers of Silesian University of Technology. Organization and Management Series*, 173, 401–418. <https://doi.org/10.29119/1641-3466.2023.173.26>
- Maltz, E., & Schein, S. (2012). Cultivating Shared Value Initiatives: A Three Cs Approach. *Journal of Corporate Citizenship*, 47, 55–74.
- Maltz, E., Thompson, F., & Jones Ringold, D. (2011). Assessing and Maximizing Corporate Social Initiatives: A Strategic View of Corporate Social Responsibility. *Journal of Public Affairs*, 11(4), 344–352. <https://doi.org/10.1002/pa.384>
- Mazurkiewicz-Pizło, A., & Pizło, W. (2018). Determinants of the Development of Vineyards and Wine Tourism in Poland. *Acta Scientiarum Polonorum. Oeconomia*, 17(4), 115–121. <https://doi.org/10.22630/ASPE.2018.17.4.58>
- McMahon, N., Sayers, A., & Alcantara, C. (2023). Political Donations and the Gender Gap during COVID-19. *Party Politics*, 29(1), 176–184. <https://doi.org/10.1177/13540688211047768>
- Menghwar, P. S., & Daood, A. (2021). Creating Shared Value: A Systematic Review, Synthesis and Integrative Perspective. *International Journal of Management Reviews*, 23(4), 466–485. <https://doi.org/10.1111/ijmr.12252>
- Olejniki, I., & Stefańska, M. (2022). Dobór próby i analiza wyników w badaniach jakościowych. In: M. Rószkiewicz, K. Mazurek-Łopacińska, A. Sagan (Eds), *Dobór próby we współczesnych badaniach marketingowych. Podejścia ilościowe, jakościowe i mieszane* (pp. 59–74). Wydawnictwo Uniwersytetu Szczecińskiego.
- Paliouras, K., & Siakas, K. V. (2017). Social Customer Relationship Management. *International Journal of Entrepreneurial Knowledge*, 5(1), 20–34. <https://doi.org/10.37335/ijek.v5i1.50>
- Park, K. O. (2020). How CSV and CSR Affect Organizational Performance: A Productive Behavior Perspective. *International Journal of Environmental Research and Public Health*, 17(7), 2556. <https://doi.org/10.3390/ijerph17072556>
- Pavlovich, K., & Corner, P. D. (2014). Conscious Enterprise Emergence: Shared Value Creation through Expanded Conscious Awareness. *Journal of Business Ethics*, 121(3), 341–351. <https://doi.org/10.1007/s10551-013-1726-y>

- Piper, G., & Schnepf, S. V. (2008). Gender Differences in Charitable Giving in Great Britain. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 19(2), 103–124. <https://doi.org/10.1007/s11266-008-9057-9>
- Pirson, M. (2012). Social Entrepreneurs as the Paragons of Shared Value Creation? A Critical Perspective. *Social Enterprise Journal*, 8(1), 31–48. <https://doi.org/10.1108/17508611211226575>
- Pomeroy, A., & Johnson, L. W. (2009). Advertising Corporate Social Responsibility Initiatives to Communicate Corporate Image: Inhibiting Scepticism to Enhance Persuasion. *Corporate Communications: An International Journal*, 14(4), 420–439. <https://doi.org/10.1108/13563280910998763>
- Porter, M. E., Hills, G., Pfitzer, M., Patscheke, S., & Hawkins, E. (2011). *Measuring Shared Value. How to Unlock Value by Linking Social and Business Results*. FSG.
- Porter, M. E., & Kramer, M. R. (2006). Strategy and Society. The Link between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*. Retrieved from: <https://hbr.org/2006/12/strategy-and-society-the-link-between-competitive-advantage-and-corporate-social-responsibility> (accessed: 20.02.2023).
- Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review*. Retrieved from: <https://hbr.org/2011/01/the-big-idea-creating-shared-value> (accessed: 12.05.2024).
- Rajarajeswari, R., & Srinivasan, K. (2021). Create Shared Value – a Win-win Business Model. *International Journal of Engineering and Management Research*, 11(3), 15–21. <https://doi.org/10.31033/ijemr.11.3.2>
- Reuschl, A., Tiberius, V., Filser, M., & Qiu, Y. (2022). Value Configurations in Sharing Economy Business Models. *Review of Managerial Science*, 16, 89–112. <https://doi.org/10.1007/s11846-020-00433-w>
- Sagawa, S., & Segal, E. (2000). Common Interest, Common Good: Creating Value through Business and Social Sector Partnerships. *California Management Review*, 42(2), 105–122. <https://doi.org/10.1177/000812560004200201>
- See, G. (2009). Harmonious Society and Chinese CSR: Is There Really a Link? *Journal of Business Ethics*, 89(1), 1–22. <https://doi.org/10.1007/s10551-008-9981-z>
- Showers, V. E., Showers, L. S., Beggs, J. M., & Cox, J. E., Jr. (2011). Charitable Giving Expenditures and the Faith Factor. *American Journal of Economics and Sociology*, 70(1), 152–186. <https://doi.org/10.1111/j.1536-7150.2010.00767.x>
- Shrivastava, P., & Kennelly, J. J. (2013). Sustainability and Place-based Enterprise. *Organization & Environment*, 26(1), 83–101. <https://doi.org/10.1177/1086026612475068>
- Shukla, M. K., & Pattnaik, P. N. (2019). Managing Customer Relations in a Modern Business Environment: Towards an Ecosystem-based Sustainable CRM Model. *Journal of Relationship Marketing*, 18(1), 17–33. <https://doi.org/10.1080/15332667.2018.1534057>
- Soroka, A., & Mazurek-Kusiak, A. (2014). The Importance of Corporate Social Responsibility of Enterprises in Business. *Acta Scientiarum Polonorum. Oeconomia*, 13(2), 117–125. Retrieved from: <https://aspe.sggw.edu.pl/article/view/502> (accessed: 23.03.2023).

Srnka, K. J., Grohs, R., & Eckler, I. (2003). Increasing Fundraising Efficiency by Segmenting Donors. *Australasian Marketing Journal*, 11(1), 70–86. [https://doi.org/10.1016/S1441-3582\(03\)70119-0](https://doi.org/10.1016/S1441-3582(03)70119-0)

Stefańska, M., & Pilarczyk, B. (2015). Strategiczne i operacyjne znaczenie CRM – Cause Related Marketing w strategii przedsiębiorstw handlowych. *Marketing i Rynek*, 8, 690–698. Retrieved from: https://www.researchgate.net/publication/284338550_Strategiczne_i_operacyjne_znaczenie_CRM-Cause_Related_Marketing_w_strategii_przedsiębiorstw_handlowych#fullTextFileContent (accessed: 20.05.2024).

Tempels, T., Blok, V., & Verweij, M. (2017). Understanding Political Responsibility in Corporate Citizenship: Towards a Shared Responsibility for the Common Good. *Journal of Global Ethics*, 13(1), 90–108. <https://doi.org/10.1080/17449626.2017.1320577>

Trujillo, D. (2018). Multiparty Alliances and Systemic Change: The Role of Beneficiaries and Their Capacity for Collective Action. *Journal of Business Ethics*, 150, 425–449. <https://doi.org/10.1007/s10551-018-3855-9>

Verboven, H. (2011). Communicating CSR and Business Identity in the Chemical Industry through Mission Slogans. *Business Communication Quarterly*, 74(4), 415–431. <https://doi.org/10.1177/1080569911424485>

Wadesango, O. (2023). Shared Value Creation and Measurement Approaches Adopted by JSE Listed Companies. *International Journal of Economics and Financial Issues*, 13(5), 142–152. <https://doi.org/10.32479/ijefi.14449>

Wójcik, P. (2016). How Creating Shared Value Differs from Corporate Social Responsibility. *Central European Management Journal*, 24(2), 32–55. <https://doi.org/10.7206/jmba.ce.2450-7814.168>

Yoon, Y., Gürhan-Canli, Z., & Schwarz, N. (2006). The Effect of Corporate Social Responsibility (CSR) Activities on Companies with Bad Reputations. *Journal of Consumer Psychology*, 16(4), 377–390. https://doi.org/10.1207/s15327663jcp1604_9

KREM, 2025, 1(1007): 147–170
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18121>

Activity Patterns among Young Women: A Time Budget Perspective

Renata Winkler¹, Marta Moczulska²

¹ Krakow University of Economics, Department of Organizational Behavior, Rakowicka 27, 31-510 Kraków, Poland, e-mail: winklerr@uek.krakow.pl, ORCID: <https://orcid.org/0000-0002-4697-9264>

² University of Zielona Góra, Department of Human Resources Management in Organisations, Licealna 9, 65-417 Zielona Góra, Poland, e-mail: m.moczulska@wez.uz.zgora.pl, ORCID: <https://orcid.org/0000-0002-1390-2914>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Winkler, R., & Moczulska, M. (2025). Activity Patterns among Young Women: A Time Budget Perspective. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 147–170. <https://doi.org/10.15678/krem.18121>

ABSTRACT

Objective: In this article, our aim is to identify and assess changes in the behaviour of young women taking into account the changes regarding gender and cultural roles.

Research Design & Methods: Analysing seven-day diary data ($N = 139$), we examined the average duration of the 12 evaluated categories of activity and their percentage contribution to the structure of young women's daily time budget. A hierarchy of women's activities in each of the five survey editions was established (2018–2022).

Findings: By comparing the time budget structures across editions, trends in women's activity levels, and an existing dependence between specific categories of activity in each edition were identified.

Implications/Recommendations: The withdrawal of young women from physical activity (limiting the time they devote to it) may be associated with significant health consequences for them in the future. The confirmed changes in the lifestyle of successive years of young (post-adolescent) women might signal a change in their comprehension of social expectations assigned to the roles fulfilled by women, and thus their level of involvement in support, care, and voluntary activities. Some limitations related to this study were recognised. Female students from a single

university were surveyed, so results are not non-generalisable. In terms of place, cultural factors could be taken into account. Therefore, the authors suggest undertaking research among university students in not only in other locations but also in other countries.

Contribution: The study reveals trends in young women's activity levels and an existing dependence between specific categories of their activity.

Article type: original article.

Keywords: young women, young adults, daily activity, time budget, social change.

JEL Classification: J11, J22, M59.

1. Introduction

According to gender schema theory (Bem, 1981), every culture associates certain social expectations with the roles performed by women and men. Depending on the gender, these expectations shape both the way individuals think about themselves and what social behaviour they present (Bem, 1974, 1981; Cross & Markus, 1993). We find confirmation of this in the area of current research in psychology, sociology, and management among others (Tolley, 2017, Codina & Pestana, 2019; Adams & Almahmoud, 2020; Bullough *et al.*, 2022; Bustelo & Salido, 2024; González & Benge, 2024).

In most cultures, women's roles are associated with expectations regarding a lower level of professional activity and a higher level of involvement in household chores, including childcare and caring for other dependent family members.

Please note that the role concepts currently operating in a given culture might not only be incoherent, but also, for a variety of reasons, clash with the changing reality. Therefore, it has long been pointed out that the current definitions of gender roles should be redefined (to be a better fit), taking into account the current situation. This would enable the reconciliation of the private and public roles of men and women, at the same time broadening (rather than restricting) their individual life choices (Bem, Martyna & Watson, 1976).

An example of real action in this area was feminism, understood as a set of movements, ideologies, and doctrines that focus on legal, political, and sociocultural equality and freedom for both women and men. In the formal sphere, this has been reflected, among other things, in the establishment of international instruments relating to gender equality. Providing access to education, granting active and passive suffrage, allowing married women to hold public office and retain their citizenship, seeking to reduce forms of discrimination in employment, requiring consent to marry, and setting a minimum age for marriage have changed not only women's living conditions but also the way they think about themselves. This is because the behavioural changes described under institutionalised conditions are subject to

cognitive regulation, according to social learning theory (Bandura, 1986). Increased expectations of self-efficacy lead to the adoption and intensification of behaviours against which this efficacy has been measured. Changes in women's living conditions, altering their perceptions of the range of activities they can perform and their assessments of their self-efficacy with respect to these activities, should therefore be translated into changes in their behaviour (Galinsky, Aumann & Bond, 2013; Agree, 2017; Moreno & Urraco, 2018), including disposition of the time (Evenson, 1982; Sayer, 2016; Rubiano-Matulevich & Viollaz, 2019; Román & Gracia, 2024).

The assessment of how the time budget (i.e. a list of time periods allocated for life activities) of individuals is shaped can allow for optimisation of both business operations focused on meeting customer needs commercially, and for designing functional solutions in terms of public policy. Hence, what seems particularly interesting and valuable is to determine the structure of the time budget in the context of factors which simultaneously significantly determine the ultimate shape of this structure for larger groups of people. Differences in the structure of the time budget within the population are explained, e.g., by respondents' age (current stage in their life cycle), their gender (i.e., demography), health status (biological factor), value structure (psychological factor), professional activity (social factor), or the level of income (economic factor).

In relation to the European Union countries, most studies highlight both issues related to the gender structure (the predominance of women as a consequence of their longer life expectancy) and the age structure of the EU population (related to the aging of society). At the same time, socio-economic changes caused the period of adolescence to be treated as a separate phase of life (Przetacznik-Gierowska & Tyszkowa, 2002; Boyd & Bee, 2008). This phase affects people between the ages of 20–23 and 35–40 and as a transition stage between youth and adulthood is referred to as post-adolescence (Vaskovics, 2001; Galland, 2003; Ikiz & Houssier, 2023), early adulthood (Gurba, 2011; Bastian, Bian & Grogger, 2022), or also postponed adulthood (Brzezińska *et al.*, 2011; Trzop & Zielińska, 2021). This period, characterised by many changes, not only turns out to be essential from the point of view the professional career of individuals and their ultimate economic status, but it is also to a large extent (especially for women) decisive for their reproduction plans (whether to have children, or not, and how many). In the context of the projected depopulation of the EU we consider the analysis of the time structure in the first stage of early adulthood of women cognitively valuable. This seems significant because the EU actively supports increasing the percentage of people with higher education. And in most of the Member States, there are more women with higher education than men. Furthermore, it was statistically confirmed that the higher the level of education of women, the lower the number of children they have.

Taking into account the described changes in gender and cultural roles and in the context of the projected depopulation of the EU, we define the aim of the article as the identification of the directions in which the structure is starting to change of the women's time budget in the first stage of their early adulthood.¹ We therefore adopt the following structure for the article. We first present the structures of women's time budgets as described in the literature and point to the directions of the research conducted. In order to assess the current state of women's time budgets, we decided to carry out a systematic review of the literature (SRL) in this field. We also point out the knowledge gap regarding the time budget of young women (women in the first stage of early adulthood). We then describe the methodology of our own research and present the results. Finally, based on the identified structure of young women's time budgets, we indicate changes in activity and time spent on it.

2. Literature Review

In light of the data collected by Chang and Chung (2018), it can be stated that gender is statistically significant for leisure identity, meaning that gender is an important factor in explaining why individuals participate and continue to participate in certain leisure activities. What deserves particular attention is the fact that women, regardless of their life stage, are characterised by a higher level of leisure identity than men (Chang & Chung, 2018). At the same time, it is important to emphasise that – as confirmed by the extensive research by Fransson *et al.* (2012) – the odds of being physically inactive are 21% and 20% higher for those with highly stressful and passive jobs, respectively.

It is evident that men spend more time per week being physically active than women, and women spend more time per week on domestic activities than men. These regularities are confirmed by the research of Moschny *et al.* (2011). According to the researchers, the observed differences cannot only be explained by factors relating to the hormonal environment and differences in body composition between men and women. The contribution of cultural factors should also be taken into account. For example, the social expectations that are assigned to the roles played by women and men. In many cultures, the role of women is associated with less active behaviours, higher involvement in domestic, childcare, or caring for other dependent family members. In this context, it is worth noting that Ikezoe *et al.* (2013) document that institutionalised elderly women spend much time in inactive positions such as sitting and lying, even in the daytime. Successively, the results of the extensive research by Giurge, Whillans and Yemiscigil (2021) show that during COVID-19 women spent more time on household chores and caring tasks than men. Importantly, these differences were stronger for parents. The need for

¹ Directions in which it is evolving.

women to measure themselves against societal expectations, i.e. a significant role in caregiving, was also observed by De Simone *et al.* (2021). Taking into account that women experience greater conflict between work and family roles than men, the researchers conclude that the pandemic period has widened this gap (particularly in terms of personal fulfilment). As noted by Carvalho and Santiago (2008), academics generally work around 10 hours per day. As part of their work, they carry out activities in the following areas: teaching, research, administration and service to society. Both men and women devote more time to teaching in the early stages of their careers and more time to research towards the end of their careers. However – and this seems to us to be particularly noteworthy – at the end of their careers (as full professors), women spend on average four hours more on administration than men of the same academic rank.

An interesting fact is also highlighted in the research by Choi and Haeri (2021). Their findings reveal patterns of social integration through leisure. Although the opportunities for Vietnamese married migrant women to meet Korean natives extensively through leisure are limited, it is a fact that this kind of opportunity is an important factor in their socialisation. In the context of the above-mentioned cultural factors, it should be taken into account that the free time of pregnant teenagers is largely focused on preparing for the birth of a child, partly as a result of social pressure (Clark & Anderson, 2014).

It is worth noting that the analysis, based on a systematic review of 324 full texts spanning the past four decades of academic literature, substantiates five dominant meta-narrative explanations for the gender gap in STEM majors (Kanny, Sax & Riggers-Piehl, 2014): individual background characteristics; structural barriers in education; psychological factors, values, and preferences; family influences and expectations; and perceptions of STEM fields. It is also worth taking this into account when evaluating the results of research and analyses, which indicate that young women take recreational walks more often (Pollard & Wagnild, 2017) and also take advantage of organised forms of recreation significantly more often than men (Kim & Beck, 2009). In particular, the later authors arrived at an interesting research conclusion that, for young women, the motivational factors of leisure trips that should be taken into account include: getaway, risk-taking and exploration, education, friends, relations, and enjoyment. On the other hand, the pull factors include convenience, climate and atmosphere, recreation, attractions and connection, surroundings, and family and awareness.

In summary, it can be seen that the research conducted addresses differences in time budgets between men and women. Social determinants (gender-based role expectations) are highlighted. Age is the focus of research in relation to specific issues, i.e. pregnant teenagers and travel preferences of female students. It is also written about in the case of an interesting research outcome (association with

a particular form of spending time). It can therefore be pointed out that there is a cognitive gap in relation to women's budgets in the first stage of their early adulthood.

3. Methodology

Preparing a time budget requires compiling the results of measured time intervals used by specific social groups within a selected period of time (day, week, month, or year). The necessary data can be obtained using a questionnaire, a questionnaire combined with an interview, a diary of activities, or a snapshot of the day or week (Harvey, 2002; Robinson, 2002; Bombol, 2008; Harms & Gershuny, 2009). The material is analysed statistically and descriptively explained (Pisarska, 2015).

In this study analysis, a diary form was used, including the following 12 categories: 1) physiological needs, 2) chores and housework, 3) professional work, 4) voluntary work, 5) education, 6) social life and entertainment, 7) commute related to education and work, 8) other trips not related to education and work, 9) sports and recreation, 10) personal hobbies, 11) using mass media, 12) using social media. The specified set of categories (except 8 and 12) was adopted from the research conducted by the Central Statistical Office of Poland (GUS, 2015, p. 20; GUS, 2016). Categories 9 and 10 were developed by us (cf. Winkler & Karna, 2020). Each of the categories listed in the diary had a supplementary description (Table 1).

The thus-developed diary forms were used in two ways. First, they served as overview material each year during lectures in the course "Leisure time sociology" in terms of the content of the tools used to build budgets. Secondly, they were used as material for the analysis and assessment of the structure of time budgets in a given year. Due to the purpose of the study (which was the identification of the directions in which the structure of women's time budgets in the first stage of their early adulthood is starting to change), unmarried, childless female, first-year graduate students were invited to participate (purposive sampling).

4. Data Analysis

The surveys were conducted over seven consecutive days at the turn of November and December, of the academic years: 2017/2018, 2018/2019, 2019/2020, 2020/2021, and 2021/2022. Diary forms were provided to each student electronically (online access). Students filled them in daily, noting the duration (in minutes) of the indicated 12 categories of activities.

After completing, each form was verified and any doubts were clarified during individual consultations. The time budget based on the collected data was constructed separately for each edition of the study. In total, 203 respondents filled in the forms, including 139 young, childless Polish women (category numbers in

the following academic years 2017 – 38, 2018 – 29, 2019 – 30, 2020 – 22, 2021 – 20).² The analysis covered both the structure of their daily time budget (i.e., shares of individual categories in the budget), as well as the average duration of specific categories of activities in individual editions of the study, taking into account data for women performing a given activity.

Table 1. The Categories of Activities Included in the Diary Form

Number	Category of Activities	
1	Physiological needs	sleep ^a , meals, personal hygiene, using the toilet, taking medication or injections
2	Chores and housework	food processing, keeping order, preparing clothes, gardening and pet care, caring for children and adults, construction, renovation, repair
3	Professional work	profit-making activities (own business, contract of employment, commission or contract of mandate)
4	Voluntary work	including volunteering in NGOs
5	Education	university classes and breaks between them, homework (preparing assigned projects)
6	Social life	including individual and group video calls (group remote simultaneous games)
7	Commuting related to education/work	on foot, by private or public transport (car, tram, train, bus), using sports vehicles or equipment (motor, moped, traditional/electric bicycle, traditional/electric scooter, skateboard, roller skates)
8	Other trips not related to education/work	on foot, by private or public transport (car, tram, train, bus), using sports vehicles or equipment (motor, moped, traditional/electric bicycle, traditional/electric scooter, skateboard, roller skates)
9	Sports and recreation	all activities related to physical activity and active leisure
10	Personal hobbies	recreational (leisure and entertainment), developmental (educational and cognitive), integration (bonding), cultural, tutorial (facilitating the assimilation of certain ideological principles), compensatory (i.e. “releasing”), other
11	Mass media	TV (public, cable), press, cinema, radio, VOD services
12	Social media	Facebook, Flickr, GoldenLine, Google+, Instagram, LinkedIn, MySpace, Odnoklassniki, Pinterest, Qzone, Reddit, Twitter, VK, Weibo, Youtube, online news sites, dating sites, other

^a Sleep, as the category between days, should be considered as the time from falling asleep to waking up.
Source: the authors.

² The number of students at the tourism and recreation faculty in each year with the number of female students of Polish origin in the total number of women: 2017 – 74 people (including 38 Polish women out of 61 women), 2018 – 46 people (including 32 Polish women out of 39 women), 2019 – 43 people (including 38 Polish women out of 41 women), 2020 – 33 people (including 25 Polish women out of 27 women), 2021 – 22 people (including 20 Polish women out of 21 women).

In the context of the results of the literature review (including the indicated dependence of the structure of leisure time on cultural conditions and social expectations towards women in terms of fulfilling the caretaking roles), changes in time budget patterns were expected to affect categories such as *physical activity*, *voluntary work*, *personal hobbies*, and *social media*. Concerning these categories, it was assumed that:

1. Physical activity among respondents in individual editions of the survey will remain at a similar level.

2. In the structure of the respondents' time budget, the share of the voluntary work in each subsequent edition will be lower.

3. In the structure of the respondents' time budget, the share of personal hobbies in each subsequent edition will be higher.

4. The share of the social media category in each subsequent edition will be higher.

The assumptions were made following the results of the literature review. At the same time, since the respondents in the study are students majoring in tourism and recreation, it was concluded that, due to the selected profile of the studies, the decreasing trend in the level of activity among women observed in the literature on the subject should not be reflected among the students. Pearson's linear correlation coefficient was used to assess the correlation between the time spent by female respondents performing specific categories of activities in each edition.

5. Results

Based on the collected data, the average duration of the analysed categories of activity in individual editions of the study was determined, as well as the percentage share of each of the categories analysed in the structure of the women's daily time budget (Table 2).

Table 2. Average Duration of Activities (in %), Their Share and Place in the Time Budget Structure (2017–2021 Editions)

Category of Activity	2017	No. ^a	2018	No. ^a	2019	No. ^a	2020	No. ^a	2021
Physiological needs	38.22	1	37.09	1	35.22	1	36.78	1	37.90
Chores and housework	7.68	6	5.46	6	5.65	8	6.18	7	6.27
Professional work	11.46	3	9.60	4	9.06	4	9.99	1	10.93
Voluntary work	0.85	11	0.72	12	0.34	12	1.74	11	0.00
Education	10.74	4	9.84	3	9.67	3	8.37	5	12.55
Social life	8.46	5	6.84	5	10.01	2	9.38	4	4.72

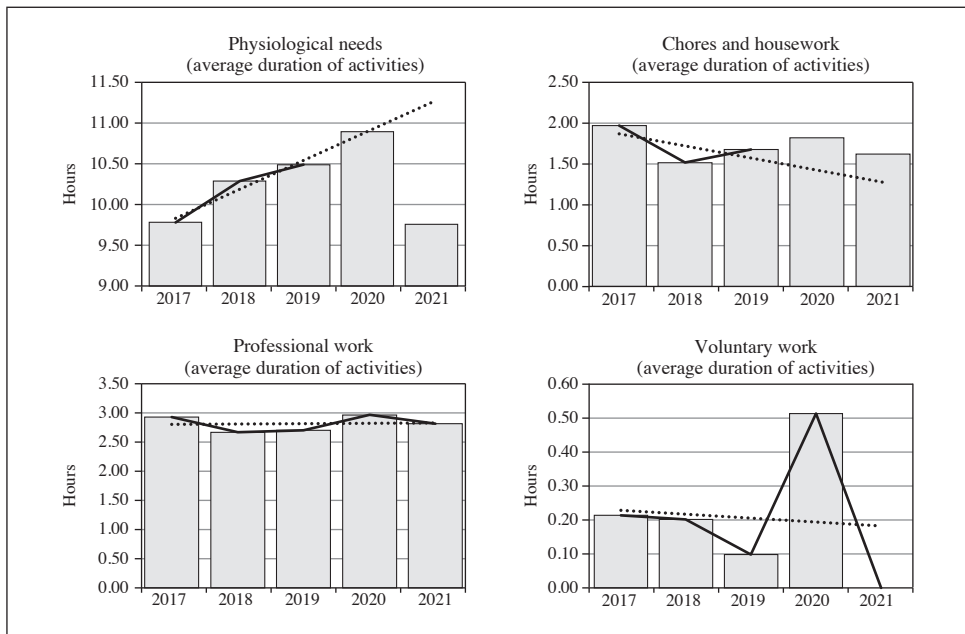
Table 2 cnt'd

Category of Activity		2017	No. ^a	2018	No. ^a	2019	No. ^a	2020	No. ^a	2021
Commuting related to education/work		3.39	8	3.48	10	2.74	11	0.79	12	0.91
Other trips not related to education/work		2.21	9	2.52	11	2.91	10	2.25	10	1.88
Sports and recreation		1.56	10	3.72	9	3.30	9	2.36	9	1.62
Personal hobbies		3.84	7	5.22	8	6.09	7	4.21	8	6.40
Media	mass media	multi-media 11.59	2	5.46	7	6.43	6	8.25	6	9.18
	social media			10.02	2	8.61	5	9.71	3	7.63
Total		100		100		100		100		100

^a Position in the time budget structure.

Source: the authors.

The values of the average time dedicated to participating in each category of activity in subsequent editions of the study are presented in the bar charts (Fig. 1).



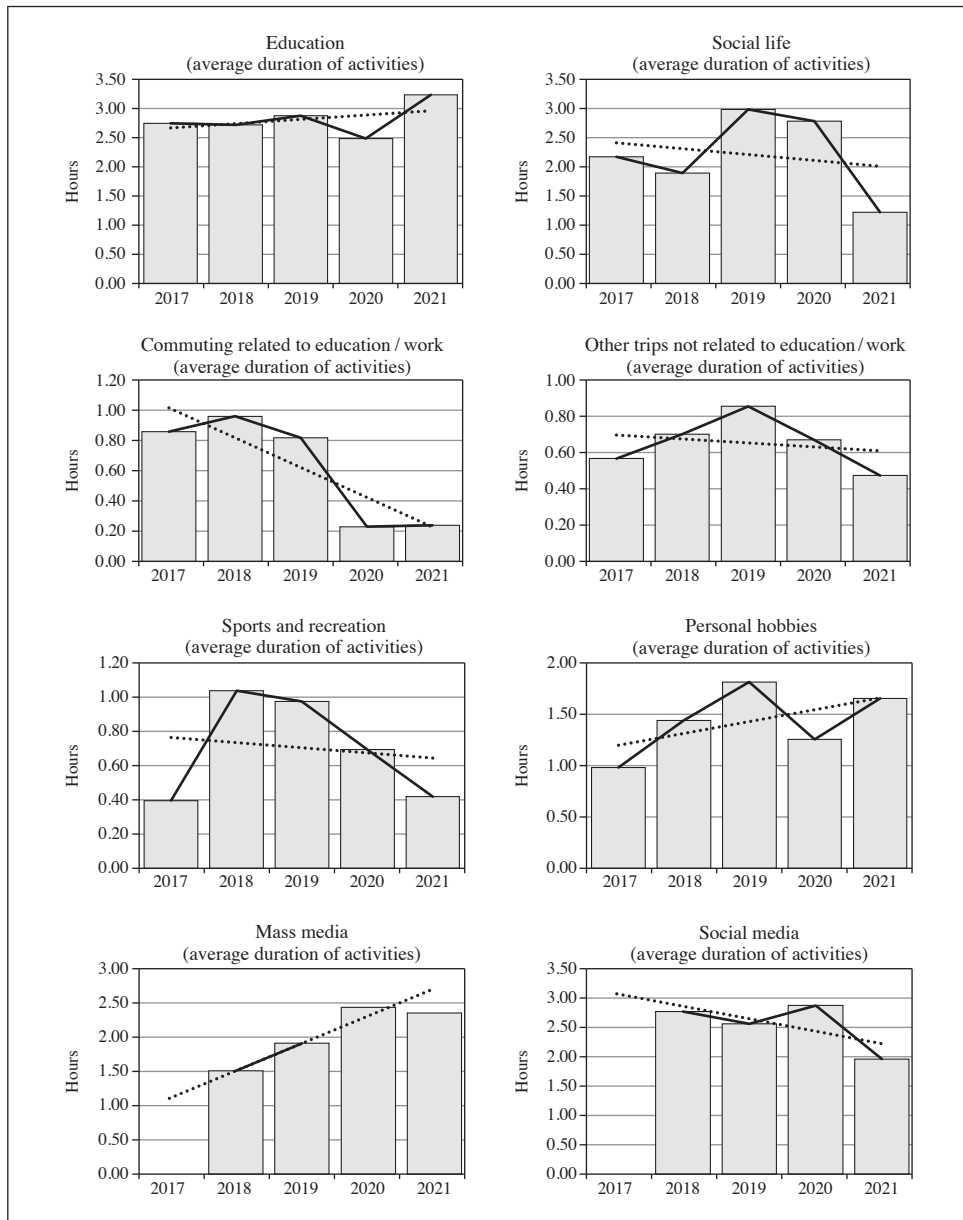


Fig. 1. The Changes in the Amount of Time Allocated to a Given Category

Source: the authors.

At the same time, it was recognised that it was necessary to take into account the fundamental differences in the data from the 2017, 2018 and 2019 editions of the

study (before the COVID-19 pandemic). Indeed, at that time (2020–2021), measures were taken on an international scale to prevent the spread of SARS-CoV-2 infections. They were mostly restrictions limiting socio-economic activity (for example: restricted freedom of movement and access to public space, mandatory online education, mandatory social distancing, limits on the number of people allowed in public spaces), which influenced time management (for example, the time spent on commuting, especially with regard to study and work, was significantly reduced) and could have resulted in changes in the time budget patterns. For the data from the 2017–2019 edition, an additional line graph (solid line) was developed. Based on data from these three years, a trend line (dashed line) was also drawn, which allows graphically highlighting the changes in the amount of time allocated to a given category, which occurred in 2020–2021 (during the pandemic period).

In light of the collected data, the results obtained in five of twelve categories were considered particularly interesting: *physiological needs*, *voluntary work*, *social life*, *social media*, and *mass media*.

Analysis of the Main Categories

Physiological needs. They have the largest share in the structure of the daily time budget of the respondents in each edition. Moreover, the average duration of activities related to *physiological needs* (sleep, meals, hygiene) in the period 2017–2019 showed a gradual upward trend. Interestingly, the increase in the average value of time dedicated to this category did not influence an increase in the percentage share of this category in the structure of the respondents' day. This share was decreasing until 2020. The most time allocated to physiological needs was observed in 2020 (10.92h), i.e. 36.78% of the daily time budget. In turn, the average time dedicated to this category in 2021 was reduced by as much as 69 minutes compared to 2020. At the same time, its share of the daily structure increased (37.90%).

Please note that in the 2017, 2018 and 2019 editions, a high level of dependence was observed (absolute values of the correlation coefficient greater than 0.7) between the time allocated to meeting physiological needs and the time dedicated to commuting (both related to work and study, as well as others), study, housework, and social life. In the 2020 and 2021 editions, the level of dependence of the average documented time dedicated to *education*, *housework*, and *social life* was maintained. As mentioned above, the restrictions in force during the lockdown period were related to personal mobility, which explains the lack of correlation between the time dedicated to the categories: *physiological needs* and *commuting*, both in 2020 and in 2021. Interestingly, within these editions, the correlation between the amount of time spent meeting physiological needs and the time spent using the mass media ($r = 0.79$ in 2020, $r = 0.78$ in 2021) and social media ($r = 0.73$ in 2020, $r = 0.86$ in 2021) turned out to be significant. Perhaps this explains the need to modify the

methods of performing some of the activities related to the broadly understood use of technology during the pandemic (e.g., the use of video calls to maintain social contacts). It also seems justified to consider the question of how the human body reacts to prolonged exposure to the blue light of mobile phones, laptops, tablets and computers, or the accompanying phenomenon of multitasking (cf. Xu, Kee & Mao, 2021; Kudesia, Pandey & Reina, 2022).

Voluntary work. In the context of the obtained data, attention was paid to changes in average time dedicated to this area in individual editions. In terms of data from the period before the pandemic, a gradual decrease in the time allocated to the category of *voluntary work* can be observed in the time budget of young childless Polish female students in second-degree studies. However, during the lockdown period (data for 2020), there was an over five-fold increase in the amount of time dedicated to this category compared to the values recorded in the previous year (31 minutes compared to 6 minutes). Thus, it seems interesting and significant that in the 2021 edition not a single respondent declared that they allocated even a minute of time to activities in this category. According to the authors, this could be mainly related to the end of the pandemic-related voluntary initiatives launched in 2020 (either as a consequence of reducing the need for support as certain formal solutions emerged or due to the execution of the vaccination programme). However, this category was present in the editions preceding the pandemic, although its share was the smallest in the structure of the daily time budget. Non-participation of respondents in activities qualifying for this category in the 2021 edition could also, to some extent, be a consequence of fatigue/overload with this type of activity. The reason could also be the need to stop (or the inability to continue) additional energy- and time-consuming activities, which were mostly carried out remotely in the 2020 edition when they were resumed in on-site.

Please note that *voluntary work* is the only category in which the allocated time was not significantly correlated with the time allocated to any of the other time categories, in any edition. What is more, it is also a category for which the values of the correlation coefficients in the 2020 edition turned out to be lower than those from previous editions, or took negative values.

Social life. In the case of the time budget for this category, two issues stand out. First, changes were observed in the time budget dedicated to this category in the 2020 and 2021 editions compared to the previous editions. Second, in the 2021 edition, this category showed a degree of dependence on the other categories.

In the 2020 edition, the average time dedicated to social life was 12 minutes less compared to the time declared in the 2019 edition. There was also a slight decrease in the percentage share of this category in the daily time budget (in 2019: 10.01%, and in 2020: 9.38%). However, it seems surprising that the time declared for this category in the time budget of the respondents is by less than half of what it was

in 2021. In this edition, the average time for social life was as much as 94 minutes shorter than in the 2020 edition (and 116 minutes shorter than in the 2019 edition). In 2021, this category's share of the daily time budget was only 4.72%, and although in the period 2017–2020 the category was among the five types of activities to which respondents dedicated the most time, it was only in 8th position in the 2020 edition. According to the authors, the results obtained in the 2021 edition could be a consequence of the eroding social bonds of the respondents in light of adopting remote-only forms of contact in the period preceding the survey. In each edition, the respondents were female students in their first semester of second-degree studies. Thus, the respondents in the 2021 edition completed the last stage of their first-degree studies online. In addition, they started the first semester of their second-degree studies online. The authors believe that this could be important both for the possibility of establishing new correlations and for deepening the already established relationships.

In the context of the above data, the values of the correlation coefficients for *social life* for the 2021 edition seem particularly interesting. Out of ten calculated correlations, in only two cases (*commuting* related to *education/professional work*) did the values of the correlation coefficient reach average values ($0.3 \leq r < 0.5$). In two other cases (*personal hobbies* and *social media*), the correlation should be considered high ($r = 0.69$) and in six cases ($0.7 \leq r < 0.9$) too high (*physiological needs, other trips not related to education/work, education, mass media, sports and recreation, chores and housework*). In none of the previous editions were such a large number of significant dependencies observed. Please note that strong correlations were observed primarily with regard to the categories in which taking actions is associated with the possibility of interacting either directly (face-to-face) or at least simultaneously.

Social media. This category was found interesting (excluding the 2020 edition) as it shows a decreasing tendency in both the average time spent by respondents on browsing social media (from 2.78h in 2018, to 1.97h in 2021), and in the share of this category in the respondents' daily budget (up to 7.63% in the 2021 edition). At the same time, however, this category was among the five categories with the highest share of the structure of the time budget in each edition.

What is also interesting is the high value of the correlation index between the time spent browsing social media platforms and the time dedicated to *physiological needs, education, and housework* ($r \geq 0.7$). This could indirectly prove the rather private nature of the activities undertaken in this area.

Regarding the last of the identified categories, i.e., the *mass media*, both the average time allocated to this category and its share of the household budget of young women are increasing significantly. Interestingly, in the 2020 edition, a very high correlation was observed between the time dedicated to this category and the

following: *physiological needs*, *education*, and *housework*. In the 2021 edition, *social life* was added to this group.

Notes on Other Categories

In relation to the other assessed categories, please note that:

- across the five editions, the average time dedicated by the respondents (young, childless, female students) to the execution of activities included in the category *housework* is at a similar level;

- in the category *professional work*, there were no significant fluctuations in both the average time dedicated to this category and its share of the daily budget;

- average time allocated to the category *studies* was shorter when remote learning was introduced. In each edition, the category *education* was among the five categories with the highest share of the time budget;

- data obtained for the category *sport and recreation* correspond to the trend of declining women's physical activity reported in the research of Reyes-Olavarría *et al.* (2020) and Aghababa *et al.* (2021);

- remote work and study has reduced commuting times. Interestingly, although some of the restrictions were lifted, the time spent on study- and work-related commuting remained at the same level in the 2021 edition as in the 2020 edition;

- the changes observed in the average duration of *other trips not related to work/education*, and the share of this category in the daily budget were smaller than in the category *commuting related to work and education*. The highest correlation coefficients were observed in the 2021 edition between this category and *social life* ($r = 0.79$), *sport and recreation* ($r = 0.71$), and *physiological needs* ($r = 0.70$);

- the share of the category *personal hobbies* in the daily budget of the respondents increased, although it was clearly limited in the 2020 edition. In the 2021 edition, it showed the highest dependence on the category *housework*.

Please note that changes in the average duration of certain categories of activity are reflected in the structure of the time budget for subsequent editions. However, changes in the share-percentage of individual categories within the budgets of consecutive editions usually hover below 2.22 percentage points (only in the 2021 edition did the categories *education* and *social life* exceed 4 percentage points). The dominant position in time budgets is occupied by activities related to the category *physiological needs*. Due to the shares specified in the structure of the daily budget, the following categories should also be considered significant: *education*, *professional work*, *social media* and *mass media*.

Concluding Remarks on Time Budgets

When analysing the time budgets from individual editions, the average duration of the categories of activities in the daily breakdown in individual editions, i.e., more

than 1,440 minutes, seem noteworthy. Simultaneous undertaking of certain activities (studying while traveling, or listening to music while doing housework, etc.) is completely natural. The observed “stretching out” of the day in subsequent editions in the above context (or due to increased multitasking) does not seem particularly surprising, although the shortening of the reported time dimension in the 2021 edition is puzzling.

6. Discussion

This article examines the issue of women’s time budgeting. The focus was on young women, i.e. in the first stage of their early adulthood. The amount of time spent on 12 activities was identified. Assumptions were made about four of them: sports and recreation, voluntary work, personal hobbies, and using social media. The share of the physical activity category should decrease, taking into account the results of the analysis of Strain *et al.* (2024), Reyes-Olavarría *et al.* (2020) and Aghababa *et al.* (2021). However, we assumed that the situation would be different for female students of tourism and recreation and that the time spent in this category would remain unchanged. In our opinion, the share of voluntary work should decrease from edition to edition. In turn the share of the last two categories should increase.

Indeed, in the survey, the share of the voluntary work category was lower in each subsequent edition (except for the 2020 edition), with this category coming last in the 2017, 2018, 2019, and 2021 editions. In the 2020 edition, this share increased significantly, which may be related to the issue raised by Giles and Oncescu (2021) of the need for women (including single women) to measure themselves against societal expectations, i.e. a significant role in caring. It should be emphasised that no respondent in the 2021 edition reported taking action in this category.

Regarding personal hobbies, a continuous increase in this category’s share of the time budget structure was observed in the 2017–2019 period. In 2020, the share of this category decreased significantly, but in 2021 it increased again. This may be related to the start of the pandemic and the time it took for women to “find themselves” in the new situation. As highlighted by Clark and Anderson (2014), social pressure played a role in the changes in leisure time behaviour of pregnant teenagers.

However, the average time devoted to social networking sites decreased, as did the share of this category in the structure of the time budget. Although it remained one of the five categories with the highest percentage share, the assumption of a continuous increase in share based on Scott *et al.* (2017) was not confirmed. Is this the result of an increased need for direct relationships at the stage of life that statistics consider the best for getting married (Aronson, 2008; Szukalski, 2017; Hochberg & Konner, 2020)? Or perhaps a growing need for privacy (Quan-Haase & Elueze, 2018; Chung *et al.*, 2021)? The possibility that respondents use digital media not included in the study should also be taken into account.

Finally, the level of physical activity (average duration and percentage) among respondents in each edition of the study steadily decreased. In the 2017 edition, the percentage of physical activity in the daily time budget ranked 10th. In the 2018, 2019, and 2020 editions it was ranked 9th, and in the 2021 edition, it was ranked 10th again. Therefore, despite the specificity of the field of study, it seems to reflect the trend of decreasing physical activity among women reported by many authors (cf. Cerrato & Cifre, 2018; Eime *et al.*, 2020; González & Benge, 2024; Strain *et al.*, 2024).

Our predictions concern the aspects discussed above. In addition, the interesting results should be noted in relation to such categories as: physiological needs and social life. In relation to the first of these, the data from our research corresponded to the changes in the time budget of Poles (aged 15 and over) reported in the 1976, 1984, 1996, 2004, and 2013 editions of the Central Statistical Office surveys (cf. GUS, 2015, 2016; Kolny, 2016). In the case of the category of social life – the interpretation of the time dedicated to social life, the share of this category in the structure of the daily time budget, and the weight of the assessed dependencies from the 2021 edition is not fully possible without assessing the changes in the quantitative and qualitative aspect of the correlation between the respondents. However, it is worth considering potential recommendations/limitations in creating/maintaining relationships in the context of available forms of contact (cf. Tomczyk, Altweck & Schmidt, 2021).

7. Summary

The aim of the article was the identification of the directions in which the structure of women's time budgets is starting to change in the first stage of their early adulthood.

In each edition, the categories: education, professional work, social life, and multimedia were among the five categories with the highest share of the time budget.³ Based on the description of the time budget in different editions and the comparison of the results, possible directions of change in the structure of the time use pattern were identified. It should be noted, of course, that some of the changes are clearly related to external factors that distinguish the period before the pandemic and the duration of the pandemic (e.g. a decrease in the share of commuting related to study and work, an increase in the share of voluntary work). Some of this seems to be cultural. At the same time, it can be noted that some of them may be related to changes in the lifestyles of subsequent generations of the older part of the younger generation that the respondents represent (e.g. media participation). It would be worthwhile to take this into account in future research.

³ Obviously, the dominant category by default is the fulfilment of physiological needs.

Some limitations related to this study are recognised. Collecting data only from female students at one university means that the results cannot be generalised. In terms of place, cultural factors could be taken into account. Therefore, the authors suggest undertaking research among university students not only in other locations but also in other countries. Given the number of female students surveyed in each year, the outlined trends in time budgets also need to be confirmed. It is worth considering their confirmation based on a comparison with women of other ages.

Acknowledgement and Financial Disclosure

The article presents the results of the Project no 052/ZZZ/2023/POT financed from the subsidy granted to the Krakow University of Economics.

Authors' Contribution

The authors' individual contribution is as follows: Renata Winkler 65%, Marta Moczulska 35%.

Conflict of Interest

The authors declare no conflict of interest.

Appendix

A systematic literature review was conducted using the procedure proposed by Hensel (2020). The stages and the activities implemented in them are described in Table A.1.

Table A.1. The Systematic Literature Review Procedure Used

No.	Name of Stage		Description
1	Defining the subject of the review and the research question		<p>Subject: The structure of the women's time budget in the light of contemporary time-budget research</p> <p>Research question: What do we know about the structure of the time budget as regards women's activity in light of the published literature reviews?</p>
2	Setting search criteria and qualifying studies for review	In terms of 2A. Defining database	<p>Databases covering multidisciplinary, peer-reviewed journals</p> <p>Selected bases: EBSCO¹, SCOPUS, WoS²</p> <p>¹EBSCO hostWeb: Academic Search Ultimate, Business Source Ultimate, Academic Research Source eJournals, EconLit with Full Text, Environment Complete, Hospitality & Tourism Complete, Teacher Reference Center</p> <p>²Science Citation Index Expanded, Social Science Citation Index, Emerging Source Citation Index</p>

Table A.1 cnt'd

No.	Name of Stage		Description
2	In terms of	2B. Defining content	<p>Subject area</p> <p>I. EBSCO: (–)</p> <p>II. SCOPUS: <i>Business, Management and Accounting – Multidisciplinary – Psychology – Social Sciences</i></p> <p>III. WoS: <i>Anthropology – Area Studies – Arts Humanities Other Topics – Behavioral Sciences – Business Economics – Cultural Studies – Demography – Development Studies – Education Educational Research – Entomology – Environmental Sciences Ecology – Family Studies – Health Care Sciences Services – International Relations – Life Sciences Biomedicine Other Topics – Psychology – Public Administration – Public Environmental Occupational Health – Science Technology Other Topics – Social Issues – Social Sciences Other Topics – Social Work Sociology – Sport Sciences – Telecommunications – Transportation – Urban Studies – Women’s Studies</i></p> <p>Search terms relating to:</p> <ul style="list-style-type: none"> • time distribution (1): <i>time budget*</i> or <i>budget* time</i> or <i>time activity budget*</i> or <i>allocation of time</i> or <i>activit* patterns</i> or <i>daytime activit*</i> or <i>spare time</i> or <i>time-use</i> or <i>use of time</i> or <i>daily activit*</i> or <i>activit* of daily</i> or <i>use time survey</i> or <i>time-space diary</i> or <i>time-space questionnaires</i> or <i>activity diary data</i> or <i>leisure</i> • the scope of the study (2): <i>wom?n</i> or <i>female*</i> or <i>gender differences</i> • the type of studies (3): <i>systematic review*</i> or <i>meta-analys*</i> or <i>metaanlys*</i> or <i>exploratory study</i> or <i>exploratory research of analysis</i> <p>Defining fields and the search strings:</p> <p>TI = (<i>terms relating to time distribution</i>) and TI = (<i>terms relating to the scope of the study</i>) and [TI = (<i>terms relating to the type of studies</i>) OR AB = (<i>terms relating to the type of studies</i>) OR TO = (<i>terms relating to the type of studies</i>)]</p>
		2C. Defining the type of publication source	<p>Criteria for inclusion:</p> <ul style="list-style-type: none"> • white literature: articles published in academic journals • language: English • availability: full text of article
3	Finding publications in databases based on search criteria		To: see Table A.2
4	Qualification of publications based on titles and abstracts		
5	Qualification and analysis of studies based on full texts		
6	Preparation of a literature review report		

Source: the authors.

Table A.2. Report: A Compilation of the Results of the Systematic Literature Review

Specification		Database			
		EBSCO		SCOPUS	WoS
Finding publications in databases based on search criteria	TI = (selected terms relating to time distribution)	45,888		172,418	36,233
	AND TI = (terms relating to the scope of the study)	1,438		3,673	1,191
	AND terms relating to the type of studies	(TI) 4	(AB) 5	53	35
		duplicated items: 2			
		7			
	white literature	6		45	31
	English language	6		41	30
full text	6		16	18	
Publications excluding duplicates		34			
Qualification of publications based on titles and abstracts		13			
Qualification and analysis of studies based on full texts		Carvalho & Santiago (2008), Kim & Beck (2009), Moschny <i>et al.</i> (2011), Fransson <i>et al.</i> (2012), Ikezoe <i>et al.</i> (2013), Pollard & Wagnild (2017), Clark & Anderson (2014), Kanny, Sax & Riggers-Piehl (2014), Chang & Chung (2018), Choi & Haeri (2021), De Simone <i>et al.</i> (2021), Giurge, Whillans & Yemiscigil (2021)			

Source: the authors.

References

- Adams, J., & Almahmoud, N. (2020). Gendering of Time Management: Perceptions and Experiences of Working Women. *Journal of Research in Administrative Sciences*, 9(2), 28–35. <https://doi.org/10.47609/JRAS2020v9i2p5>
- Aghababa, A., Zamani Sani, S. H., Rohani, H., Nabilpour, M., Badicu, G., Fathirezaie, Z., & Brand, S. (2021). No Evidence of Systematic Change of Physical Activity Patterns before and during the COVID-19 Pandemic and Related Mood States among Iranian Adults Attending Team Sports Activities. *Frontiers in Psychology*, 12, 1–9. <https://doi.org/10.3389/fpsyg.2021.641895>
- Agree, E. M. (2017). Social Changes in Women’s Roles, Families, and Generational Ties. *Generations*, 41(2), 63–70.
- Aronson, P. (2008). The Markers and Meanings of Growing up: Contemporary Young Women’s Transition from Adolescence to Adulthood. *Gender and Society*, 22(1), 56–82. <https://doi.org/10.1177/0891243207311420>

- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice Hall.
- Bastian, J. E., Bian, L., & Grogger, J. T. (2022). How Did Safety-net Reform Affect the Education of Adolescents from Low-income Families? *Labour Economics*, 77, 102031. <https://doi.org/10.1016/j.labeco.2021.102031>
- Bem, S. L. (1974). The Measurement of Psychological Androgyny. *Journal of Consulting and Clinical Psychology*, 42(2), 155–162. <https://doi.org/10.1037/h0036215>
- Bem, S. L. (1981). Gender Schema Theory: A Cognitive Account for Sex Typing. *Psychological Review*, 88(4), 354–364. <https://doi.org/10.1037/0033-295x.88.4.354>
- Bem, S. L., Martyna, W., & Watson, C. (1976). Sex Typing and Androgyny: Further Explorations of the Expressive Domain. *Journal of Personality and Social Psychology*, 34(5), 1016–1023. <https://doi.org/10.1037/0022-3514.34.5.1016>
- Bombol, M. (2008). *Czas wolny jako kategoria diagnostyczna procesów rozwoju społeczno-gospodarczego*. Oficyna Wydawnicza SGH w Warszawie.
- Boyd, D., & Bee, H. L. (2008). *Psychologia rozwoju człowieka*. Zysk i S-ka.
- Brzezińska, A. I., Kaczan, R., Piotrowski, K., & Rękosiewicz, M. (2011). Odroczona dorosłość: Fakt czy artefakt? *Nauka*, 4, 67–107.
- Bullough, A., Guelich, U., Manolova, T. S., & Schjoedt, L. (2022). Women's Entrepreneurship and Culture: Gender Role Expectations and Identities, Societal Culture, and the Entrepreneurial Environment. *Small Business Economics*, 58, 985–996. <https://doi.org/10.1007/s11187-020-00429-6>
- Bustelo, M., & Salido, O. (2024). Gender Biases in the Evaluation of Knowledge Transfer: A Meta-evaluative Analysis of the Spanish “Knowledge Transfer and Innovation Sexennium”. *Evaluation and Program Planning*, 104, 102432. <https://doi.org/10.1016/j.evalprogplan.2024.102432>
- Carvalho, T., & Santiago, R. (2008). Gender Differences on Research: The Perceptions and Use of Academic Time. *Tertiary Education and Management*, 14(4), 317–330. <https://doi.org/10.1080/13583880802485311>
- Cerrato, J., & Cifre, E. (2018). Gender Inequality in Household Chores and Work-family Conflict. *Frontiers in Psychology*, 3(9), 1330. <https://doi.org/10.3389/fpsyg.2018.01330>
- Chang, S., & Chung, G. E. (2018). Leisure-tourism Connection Behaviors by Life Stage and Gender. *International Journal of Culture, Tourism and Hospitality Research*, 12(3), 292–309. <https://doi.org/10.1108/IJCTHR-03-2018-0036>
- Choi, S.-H., & Haeri, J. (2021). How Can Marriage Immigrants Contribute to the Sustainability of the Host Country? Implications from the Leisure and Travel Patterns of Vietnamese Women in South Korea. *Sustainability*, 13(3), 1039. <https://doi.org/10.3390/su13031039>
- Chung, K.-C., Chen, C.-H., Tsai, H.-H., & Chuang, Y.-H. (2021). Social Media Privacy Management Strategies: A SEM Analysis of User Privacy Behaviors. *Computer Communications*, 174, 122–130. <https://doi.org/10.1016/j.comcom.2021.04.012>

- Clark, B. S., & Anderson, D. M. (2014). Not Yet a Woman, Not Yet a Mom. *Journal of Leisure Research*, 46(5), 509–524. <https://doi.org/10.1080/00222216.2014.11950340>
- Codina, N., & Pestana, J. V. (2019). Time Matters Differently in Leisure Experience for Men and Women: Leisure Dedication and Time Perspective. *International Journal of Environmental Research and Public Health*, 16(14), 2513. <https://doi.org/10.3390/ijerph16142513>
- Cross, S. E., & Markus, H. R. (1993). Gender in Thought, Belief, and Action: A Cognitive Approach. In: A. E. Beall, R. J. Sternberg (Eds), *The Psychology of Gender* (pp. 55–98). The Guilford Press.
- De Simone, S., Pileri, J., Rapp-Ricciardi, M., & Barbieri, B. (2021). Gender and Entrepreneurship in Pandemic Time: What Demands and What Resources? An Exploratory Study. *Frontiers in Psychology*, 12, 668875. <https://doi.org/10.3389/fpsyg.2021.668875>
- Eime, R., Harvey, J., Charity, M., & Westerbeek, H. (2020). Longitudinal Trends in Sport Participation and Retention of Women and Girls. *Frontiers in Sports and Active Living*, 2, 39. <https://doi.org/10.3389/fspor.2020.00039>
- Evenson, R. E. (1982). The Allocation of Women's Time: An International Comparison. *Cross-Cultural Research*, 17(3–4), 196–215. <https://doi.org/10.1177/106939718201700303>
- Fransson, E. I., Heikkilä, K., Nyberg, S. T., Zins, M., Westerlund, H., Westerholm, P., Väänänen, A., Virtanen, M., Vahtera, J., Theorell, T., Suominen, S., Singh-Manoux, A., Siegrist, J., Sabia, S., Rugulies, R., Pentti, J., Oksanen, T., Nordin, M., Nielsen, M. L., Marmot, M. G., ... Kivimäki, M. (2012). Job Strain as a Risk Factor for Leisure-time Physical Inactivity: An Individual-participant Meta-analysis of up to 170,000 Men and Women: The IPD-Work Consortium. *American Journal of Epidemiology*, 176(12), 1078–1089. <https://doi.org/10.1093/aje/kws336>
- Galinsky, E., Aumann, K., & Bond, J. T. (2013). Times Are Changing: Gender and Generation at Work and at Home in the USA. In: S. Poelmans, J. H. Greenhaus, M. L. H. Maestro (Eds), *Expanding the Boundaries of Work-family Research* (pp. 279–296). Palgrave Macmillan. https://doi.org/10.1057/9781137006004_13
- Galland, O. (2003). Adolescence, Post-adolescence, Youth: Revised Interpretations. *Revue française de sociologie*, 44, 163–188. <https://doi.org/10.3917/rfs.445.0163>
- Giles, A. R., & Oncescu, J. (2021). Single Women's Leisure during the Coronavirus Pandemic. *Leisure Sciences*, 43(1–2), 204–210. <https://doi.org/10.1080/01490400.2020.1774003>
- Giurge, L. M., Whillans, A. V., & Yemiscigil, A. (2021). A Multicountry Perspective on Gender Differences in Time Use during COVID-19. *Proceedings of the National Academy of Sciences of the United States of America*, 118(12), 1–7. <https://doi.org/10.1073/pnas.2018494118>
- González, D. A., & Bengue, J. F. (2024). Do We All Do the Same Things? Applicability of Daily Activities at the Intersection of Demographics. *Neuropsychology*, 38(5), 379–391. <https://doi.org/10.1037/neu0000956>
- Gurba, E. (2011). Wczesna dorosłość. In: B. Harwas-Napierała, J. Trempała (Eds), *Psychologia rozwoju człowieka* (pp. 287–311). Wydawnictwo Naukowe PWN.

- GUS. (2015). *Time Use Survey 2013: Part 1*. Główny Urząd Statystyczny. Retrieved from: <https://stat.gov.pl/obszary-tematyczne/warunki-zycia/dochody-wydatki-i-warunki-zycia-ludnosci/budzet-czasu-ludnosci-w-2013-r-czesc-ii-wraz-z-czescia-i,19,2.html> (accessed: 7.08.2017).
- GUS. (2016). *Time Use Survey 2013: Part 2*. Główny Urząd Statystyczny. Retrieved from: <https://stat.gov.pl/obszary-tematyczne/warunki-zycia/dochody-wydatki-i-warunki-zycia-ludnosci/budzet-czasu-ludnosci-w-2013-r-czesc-ii-wraz-z-czescia-i,19,2.html> (accessed: 7.08.2017).
- Harms, T., & Gershuny, J. (2009). *Time Budgets and Time Use* (RatSWD Working Paper Series No. 65). German Council for Social and Economic Data (RatSWD). <https://doi.org/10.2139/ssrn.1447888>
- Harvey, S. (2002). Guidelines for Time Use Data Collection and Analysis. In: W. E. Pentland, A. S. Harvey, M. P. Lawton, M. A. McColl (Eds), *Time Use Research in the Social Sciences* (pp. 19–46). Springer. https://doi.org/10.1007/0-306-47155-8_2
- Hensel, P. (2020). *Systematyczny przegląd literatury w naukach o zarządzaniu i jakości*. Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego.
- Hochberg, Z., & Konner, M. (2020). Emerging Adulthood, a Pre-adult Life-history Stage. *Frontiers in Endocrinology*, 10, 918. <https://doi.org/10.3389/fendo.2019.00918>
- Ikezoe, T., Asakawa, Y., Shima, H., Kishibuchi, K., & Ichihashi, N. (2013). Daytime Physical Activity Patterns and Physical Fitness in Institutionalized Elderly Women: An Exploratory Study. *Archives of Gerontology and Geriatrics*, 57(2), 221–225. <https://doi.org/10.1016/j.archger.2013.04.004>
- Ikiz, S., & Houssier, F. (2023). The End of Adolescence, Becoming an Adult: From Reverie to the Project. *The Psychoanalytic Study of the Child*, 76(1), 168–189. <https://doi.org/10.1080/00797308.2021.2016318>
- Kanny, M. A., Sax, L. J., & Riggers-Piehl, T. A. (2014). Investigating Forty Years of Stem Research: How Explanations for the Gender Gap Have Evolved over Time. *Journal of Women and Minorities in Science and Engineering*, 20(2), 127–148. <https://doi.org/10.1615/jwomenminorscieng.2014007246>
- Kim, K., & Beck, J. A. (2009). Exploring Leisure Trip Behaviours of University Women Students: An Investigation of Push and Pull Motivational Models. *Journal of Hospitality Marketing & Management*, 18(4), 386–405. <https://doi.org/10.1080/19368620902799593>
- Kolny, B. (2016). Analiza czasu wolnego w budzecie czasu Polaków. *Handel Wewnętrzny*, 2(361), 228–240.
- Kudesia, R. S., Pandey, A., & Reina, C. S. (2022). Doing More with Less: Interactive Effects of Cognitive Resources and Mindfulness Training in Coping with Mental Fatigue from Multitasking. *Journal of Management*, 48(2), 410–439. <https://doi.org/10.1177/0149206320964570>
- Moreno, A., & Urraco, M. (2018). The Generational Dimension in Transitions: A Theoretical Review. *Societies*, 8(3), 49. <https://doi.org/10.3390/soc8030049>

- Moschny, A., Platen, P., Klaaßen-Mielke, R., Trampisch, U., & Hinrichs, T. (2011). Physical Activity Patterns in Older Men and Women in Germany: A Cross-sectional Study. *BMC Public Health, 11*, 559, 1–12. <https://doi.org/10.1186/1471-2458-11-559>
- Pisarska, B. (2015). Badanie budżetu czasu studentów, w tym ich czasu wolnego – studia przypadków. In: M. Makowska-Iskierka (Ed.), *Badania nad turystyką. Jeden cel, różne podejścia* (pp. 159–175). Wydawnictwo Uniwersytetu Łódzkiego. <https://doi.org/10.18778/7969-831-8.12>
- Pollard, T. M., & Wagnild, J. M. (2017). Gender Differences in Walking (for Leisure, Transport and in Total) across Adult Life: A Systematic Review. *BMC Public Health, 17*, 341, 1–11. <https://doi.org/10.1186/s12889-017-4253-4>
- Przetacznik-Gierowska, M., & Tyszkowa, M. (2002). *Psychologia rozwoju człowieka. T. 1. Zagadnienia ogólne*. Wydawnictwo Naukowe PWN.
- Quan-Haase, A., & Elueze, I. (2018). Revisiting the Privacy Paradox: Concerns and Protection Strategies in the Social Media Experiences of Older Adults. In: *Proceedings of the 9th International Conference on Social Media and Society (SMSociety '18)* (pp. 150–159). Association for Computing Machinery. <https://doi.org/10.1145/3217804.3217907>
- Reyes-Olavarría, D., Latorre-Román, P. A., Guzmán-Guzmán, I. P., Jerez-Mayorga, D., Caamaño-Navarrete, F., & Delgado-Floody, P. (2020). Positive and Negative Changes in Food Habits, Physical Activity Patterns, and Weight Status during COVID-19 Confinement: Associated Factors in the Chilean Population. *International Journal of Environmental Research and Public Health, 17*(15), 5431. <https://doi.org/10.3390/ijerph17155431>
- Robinson, J. P. (2002). The Time-diary Method: Structure and Uses. In: W. E. Pentland, A. S. Harvey, M. P. Lawton, M. A. McColl (Eds), *Time Use Research in the Social Sciences* (pp. 47–89). Springer. https://doi.org/10.1007/0-306-47155-8_3
- Román, J. G., & Gracia, P. (2024). Gender Differences in Time Use across Age Groups: A Study of Ten Industrialized Countries, 2005–2015. *PLoS ONE, 19*(7), e0264411. <https://doi.org/10.1371/journal.pone.0264411>
- Rubiano-Matulevich, E., & Viollaz, M. (2019). *Gender Differences in Time Use: Allocating Time between the Market and the Household* (Policy Research Working Paper No. 8981). World Bank. <https://doi.org/10.1596/1813-9450-8981>
- Sayer, L. (2016). Trends in Women's and Men's Time Use, 1965–2012: Back to the Future? In: S. McHale, V. King, J. Van Hook, A. Booth (Eds), *Gender and Couple Relationships* (pp. 43–77). Springer. https://doi.org/10.1007/978-3-319-21635-5_2
- Scott, C. F., Bay-Cheng, L. Y., Prince, M. A., Nochajski, T. H., & Collins, R. L. (2017). Time Spent Online: Latent Profile Analyses of Emerging Adults' Social Media Use. *Computers in Human Behavior, 75*, 311–319. <https://doi.org/10.1016/j.chb.2017.05.026>
- Strain, T., Flaxman, S., Guthold, R., Semanova, E., Cowan, M., Riley, L. M., Bull, F. C., Stevens, G. A., & Country Data Author Group. (2024). National, Regional, and Global Trends in Insufficient Physical Activity among Adults from 2000 to 2022: A Pooled Analysis of 507 Population-based Surveys with 5.7 Million Participants. *The Lancet. Global Health, 12*(8), e1232–e1243. [https://doi.org/10.1016/S2214-109X\(24\)00150-5](https://doi.org/10.1016/S2214-109X(24)00150-5)

Szukalski, P. (2017). Małżeństwa w Polsce w najbliższych latach. *Demografia i Gerontologia Społeczna. Biuletyn Informacyjny*, 7. <https://hdl.handle.net/11089/23759>

Tolley, E. (2017). Into the Mainstream or Still at the Margins? 50 Years of Gender Research in the Canadian Political Science Association. *Canadian Journal of Political Science*, 50(1), 143–161. <https://doi.org/10.1017/S0008423916001177>

Tomczyk, S., Altweck, L., & Schmidt, S. (2021). How Is the Way We Spend Our Time Related to Psychological Wellbeing? A Cross-sectional Analysis of Time-use Patterns in the General Population and Their Associations with Wellbeing and Life Satisfaction. *BMC Public Health*, 21(1), 1858. <https://doi.org/10.1186/s12889-021-11712-w>

Trzop, B., & Zielińska, M. (2021). Youth Policy in Poland – the Dispersion of Competences in the Context of Complexity of Contemporary Youth Problems. In: D. Szaban, I. Nowosad, P. Pochyły (Eds), *Designing and Implementing Public Policy of Contemporary Polish Society: Selected Problem* (pp. 51–64). V&R Unipress. <https://doi.org/10.14220/9783737013697.51>

Vaskovics, L. (2001). The Sociological Theory of Post-adolescence. *Review of Sociology*, 7(1), 5–20. <https://doi.org/10.1556/revsoc.7.2001.1.1>

Winkler, R., & Karna, W. (2020). Analiza dobowego budżetu czasu studiujących kobiet w świetle badań podłużnych (2017–2019). In: M. Ćwiklicki, K. Sienkiewicz-Małyjurek (Eds), *Ekonomia Społeczna. Przedsiębiorczość społeczna w czasie kryzysu* (pp. 138–148). Uniwersytet Ekonomiczny w Krakowie. <https://doi.org/10.15678/ES.2020.2.12>

Xu, S., Kee, K., & Mao, C. (2021). Multitasking and Work-life Balance: Explicating Multitasking When Working from Home. *Journal of Broadcasting and Electronic Media*, 65(3), 397–425. <https://doi.org/10.1080/08838151.2021.1976779>

KREM, 2025, 1(1007): 171–188
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.18632>

Generation Z's Approach to Searching for and Performing Work

Dariusz Nowak¹, Emil Nikolov², Joanna Wiśniewska³

¹ Poznań University of Economics and Business, Institute of Management, Department of Corporate Resources Management, Niepodległości 10, 61-875 Poznań, Poland, e-mail: dariusz.nowak@ue.poznan.pl, ORCID: <https://orcid.org/0000-0001-7448-6101>

² Tsenov Academy of Economics, Faculty of Industry and Commerce, Department of Industrial Business and Entrepreneurship, 2 Em. Chakarov Str., 5250 Svisthov, Bulgaria, e-mail: e.nikolov@uni-svisthov.bg, ORCID: <https://orcid.org/0000-0003-3852-9316>

³ University of Szczecin, Institute of Management, Department of Business Management, Papieża Jana Pawła II 31, 70-451 Szczecin, Poland, e-mail: joanna.wisniewska@usz.edu.pl, ORCID: <https://orcid.org/0000-0002-1607-8721>

This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 License (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Suggested citation: Nowak, D., Nikolov, E., & Wiśniewska, J. (2025). Generation Z's Approach to Searching for and Performing Work. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 171–188. <https://doi.org/10.15678/krem.18632>

ABSTRACT

Objective: The main purpose of the article is to identify the most significant factors influencing Generation Z's approach to work. The priorities that guide individuals of this generation in looking for and performing work were established and then assessed.

Research Design & Methods: The paper conducts a critical review of the literature before presenting quantitative research. The basis for the empirical research was a two-part questionnaire. The first one was a data sheet used to characterise the sample, while the second contained closed questions that respondents rated on a 5-point Likert scale. The collected empirical material was coded and converted into numerical data for detailed analyses of the population. The scale enabled us to determine the strength and direction of the impact of each variable. Due to the multidimensional and multifaceted nature of the problem, factor analysis procedures were used. The decisive factor for choosing this procedure was the individualised and subjective nature of most responses. Calculations were done with Statistica StatSoft 13.3, using descriptive statistics,

correlations, and multivariate analyses. The survey was conducted in late 2022 and early 2023 on a sample of 428 representatives of Generation Z.

Findings: The results showed that Generation Z's approach to work is pragmatic and confrontational. In their search for and performance of a job, they consider standard factors such as: salary adequate to the commitment and the position, various employee benefits, and the relationship and atmosphere in the workplace. At the same time, they strive for independence, prefer flexible working hours, seek understanding, forbearance and empathy and, above all, lack of exploitation and being overloaded with tasks.

Implications/Recommendations: Demographic changes in today's world have forced companies to change their employment policies. In many cases, the methods have not met expectations, which has been a factor in the widening employment gap. Our research could help entrepreneurs understand Generation Z and fashion job offers that are attractive to Gen Z as it enters the labour market. They should also help Gen Z navigate the labour market, particularly regarding employer expectations and conditions.

Contribution: The results of the study are a voice in the discussion on the behaviour, expectations, approach and commitment of Generation Z in the labour market. The factors confirm other research and underscore the dynamic changes this generation is exhibiting as it carves out its place in socio-economic life.

Article type: original article.

Keywords: Generation X, Y, Z, attitude to work, lifestyle, behaviour, expectations.

JEL Classification: J24, M54.

1. Introduction

The factors that influence the approach to work of professionally active people are in constant flux. Such factors are based on economic, social, demographic, political and legal changes. The development of technology, including artificial intelligence, virtual reality, the Internet of Things, cloud, robotics, and biometrics has had a significant impact on the attitude of individual generations to perform professional duties. It has brought about the need for individuals to continuously improve their qualifications, acquire new skills and navigate changes in communication as the workplace evolves from traditional to digital (Beer & Mulder, 2020).

Each generation sees the world in new ways; each also acquires knowledge, uses new tools and masters emerging applications with its own speed. Each one is also guided by different values, rules and principles, which should be understood as the foundation basis for choices that affect the standard and quality of life. Different priorities, goals and lifestyles contribute in the organisation to the creation of "intergenerational conflicts," which must be properly managed (Urlick *et al.*, 2017). Therefore, it becomes extremely important to know in detail the priorities of indi-

vidual generations, as doing so allows you to create specific job offers that take into account the values professed.

Currently, Generation Z (people born in the years 1995–2012) is entering the labour market. Gen Zers' perception of the world is conditioned by the development of the digital world, computerisation, virtual reality and artificial intelligence. It follows a diametrically different approach to work, centered around work-life balance, than the generations that preceded it (Kovacheva, 2012; Sirgy & Lee, 2018).

“Quiet quitting” is another labour market trend of recent years, with employees performing only the minimum requirements of their job, avoiding excessive engagement or taking on additional responsibilities (Öztürk, Arikan & Ocak, 2023). Largely, this is a response to the lack of balance between work and personal life, as well as increasing employer demands without appropriate remuneration or recognition (Mahand & Caldwell, 2023). Quiet quitting is particularly noticeable among younger generations, including Generation Z, which prioritise work-life balance and avoid excessive work-related stress. This approach can boost productivity and team dynamics, suggesting employers should pay attention to their employees' needs and strive to create more balanced working conditions (Ochis, 2024). Understanding and addressing the causes of quiet quitting can help a company retain talent and improve overall job satisfaction within the organisation.

The study sought to identify the most important factors that influence Generation Z's approach to work. The study has a qualitative and a quantitative component. First, the priorities followed by people representing this generation in the process of looking for and performing a job were examined. They were then verified using factor analysis.

2. Generation Z on the Labour Market – Theory

There are currently five generations on the labour market. The largest is Gen X (people born in 1965–1980), millennials, i.e. Generation Y (1981–1996), is the second largest. Baby boomers (BB) (1946–1964) is the third largest but it is slowly leaving the labour market. Generation Z (1995–2012) rounds out the list (Tsetsemaa, Enkhbayar & Altanchimeg, 2019).

Generation Z has been called the “i” generation (iPad, iPhone) (Kukla & Nowacka, 2019). They are also referred to as digital children, Internet children, dot-coms, the .com generation or Founders, Centennials, instant online (Levickaitė, 2010; Magano *et al.*, 2020). They have grown up and gained experience in a digital world that has come to be dominated by virtual reality and artificial intelligence, where behaviour, interpersonal communication and interactions were based on modern information technologies (Georgieva & Atanasova, 2015; Lanier, 2017). They believe the workplace should be equipped with modern technologies, which, along with technical progress, must be updated regularly. Using modern technol-

ogies, they can multitask while at the same time lacking the ability to focus on a specific problem, which can be treated superficially or vaguely.

Using social media, Gen Z has become open, comments and evaluates on current events, shares information and expects feedback (Dolot, 2018). Communication is usually informal, individual, two-way, fast and extremely direct (Benítez-Márquez *et al.*, 2022). Therefore, a well-developed system of communication with superiors is necessary. They should provide information in real time, and not during scheduled meetings or assessments.

From the point of view of modern enterprises, Gen Z is particularly important, especially given the decline in the birthrate and workforce. To remain competitive and provide a high level of customer service, companies must employ them in appropriate positions, with an environment and working conditions that suit them. Recognising the essential features, preferences, goals and dreams that distinguish this generation is an important challenge (Racolta-Paina & Irini, 2021).

The needs, values, lifestyle, and preferences of Gen Z must be recognised. Recruitment policies, the hiring process and the incentive systems can then be modified, ultimately allowing companies to employ and retain the most valuable people (Gaidhani, Arora & Sharma, 2019). Gen Zers are not attached to the workplace; they easily change jobs and are constantly looking for alternative ways of develop (Csiszárík Kocsír & Garia-Fodor, 2018). Thus they are looking for their place and purpose, while expecting trust, support and inspiration from employers in everyday work as well as opportunities to develop professionally and take up new challenges (Workforce Institute, 2019).

Gen Z clearly does not intend to copy the work-related behaviour of their parents, Generations X and Y, for whom work has often become the purpose and meaning of life (Roach, Goodwin & Nelson, 2019). For Generation Z, work is a tool that allows them to realise their dreams, ensure development and stability. Their main goal is to strive for a balance between professional commitment and private and social life. They exhibit high self-confidence and a willingness to take risks. In addition, research indicates that Generation Z employees are resistant to standard procedures and authorities (Racolta-Paina & Irini, 2021).

Dolot (2018) found that one of the most important features of Gen Z is its high level of professional activity and the simultaneous willingness and ability to study and work. When choosing a place of work, they clearly and precisely communicate their expectations, both in terms of remuneration, duties and other working conditions, including, above all, a flexible working day. At the same time, they expect a specific promotion path, and perceive success through the prism of progress at work. They emphasise that the position and ranking at work should not be conditioned by seniority or age, but by a contribution that should be analysed through the prism of ideas, initiatives and commitment.

Atmosphere at work, a properly selected team, its age and composition, and the process of managing and implementing tasks are all crucial to Gen Zers. They also understand that the education system may not fully prepare them for the labour market (Bridges, 2015; Zheley & Iliev, 2023). A desirable employer is therefore one who offers various types of training, courses, internships and workshops, while also providing the latest technical equipment (Bieleń & Kubiczek, 2020).

An important feature that should be taken into account by the future employer is Gen Z's desire for sustainable development, which is manifested in high social tolerance and responsibility for the wasteful use of natural resources (Mihelich, 2013). In addition, they accept different behaviours, differences related to race, religion, gender, ethnic origin, and barriers related to cultural differences (Kapil & Roy, 2014; Chillakuri & Mahanandia, 2018).

3. Research Method

An empirical study identifying factors determining Gen Z's approach to work was conducted as part of broader observations on changes occurring in human resource management. It was conducted in 2022, in two stages, on a sample of 428 students. The first stage identified 26 factors which were subjected to quantitative verification. A research questionnaire consisting of two parts was used. The first was a metric that made it possible to characterise the sample. In the second, the respondents assessed the variables on a 5-point Likert scale, where 1 meant that a given factor was not of great importance in the process of seeking or performing duties resulting from the employment relationship, while 5 meant the issue was of great importance. The empirical material was coded and then converted to numerical form, which enabled detailed analyses of the population. The Likert scale allowed us to determine the strength and direction of the influence of each variable by calculating the arithmetic mean. It also enabled us to build a ranking of the factors determining Gen Z's approach to work. Parenthetically, the arithmetic mean is an intuitive and easy-to-understand indicator, as it allows for a quick understanding of the overall trend in respondents' answers to a given question. Further, it provides a comprehensive picture of the given group's opinions. This is crucial in social research, as it allows for the comparison of results between various aspects of the topic under consideration. In this study, this average was defined as the significance coefficient N of a given factor and serves as an auxiliary measure in further research.

Due to the multidimensional nature of the problem, factor analysis was adopted as an additional research method. It was chosen because the answers to the research questions were individualised and subjective. Factor analysis is used in situations where a given phenomenon is studied using a number of variables that may have interdependencies. High correlation means that the information contained in them

is duplicated many times. Factor analysis also makes it possible to eliminate insignificant variables from the primary research, the value and importance of which are difficult to determine in the initial period. The calculations were made using Statistica StatSoft version 13.3, using several modules including descriptive statistics, correlations and multivariate analyses.

Table 1. Characteristics of the Test Sample

Characteristic	Number of Indications <i>n</i> = 415	Share (%)
Sex		
Female	326	78.5
Male	89	21.4
Work experience^a		
None	50	12.0
1–2 years	226	54.5
3–5 years	95	22.9
6–10 years	29	7
Over 10 years	15	3.6
Job change^a		
None	101	24.4
1–2	174	41.9
3–5	113	27.2
6–10	23	5.5
Over 10 times	4	1
Competences		
Consistent with the work performed	201	48.4
Inconsistent with the work performed	119	28.7
Difficult to determine	95	22.9
Subjective attitude to work		
Simulating and pretending work	0	0
Only performing assigned duties (with the least possible involvement)	25	6
Doing one's job without commitment (I work as much as I have to)	98	23.6
I am committed – I do more than the work I am assigned	167	40.2
I show initiative, looking for new ideas, ways, opportunities for development	125	30.1

Table 1 cont'd

Characteristic	Number of Indications <i>n</i> = 415	Share (%)
Priorities in life ^b		
Work	39	9.4
Career	118	28.4
Social promotion	60	14.4
Self-development	181	43.6
Family	261	62.9
Health	181	43.6
Living in accordance with nature	21	5.1
Wealth	95	22.8
Travels	143	34.4
Hobbies and developing passion	120	28.9
Dream come true	152	36.6
Fame	8	1.9

^a Included seasonal work, contract work, holiday work, etc.; ^b more than 3 answers could be indicated. Source: the authors.

The selection of entities for the study was based on non-random, purposeful selection of typical units. The basic criterion was belonging to Generation Z. The study involved 428 full-time and part-time students, 415 of whom qualified for further analysis (9 respondents (2%) were from Generation Y and 4 (0.9%) from Generation X). Table 1 presents the detailed characteristics of the test sample.

4. Research Results

The significance coefficient *N* of all the examined variables ranges from 4.59 to 3.43, with a median of 4.1. Respondents found the following particularly important: interpersonal relationships (*N* = 4.6), lack of exploitation and excessive exploitation (*N* = 4.47), remuneration adequate to commitment (*N* = 4.5) and work in line with interests, flexible working hours, the stability of the work, and a sense of acceptance and belonging to a group (*N* = 4.3). The following aspects were less important: the need to observe an 8-hour working day (*N* = 3.43), non-wage incentive programmes (*N* = 3.8) and work in line with education (*N* = 3.8). Table 2 presents the values of the significance coefficient of all variables, as well as two positional measures – mode and median – in order to better illustrate the research results.

Table 2. Distribution of Answers on Factors Influencing Gen Z's Approach to Work

Variables	Basic Parameters			Percentage of Indications				
	<i>N</i>	<i>Me</i>	<i>Do</i>	1	2	3	4	5
1. Remuneration adequate to commitment	4.50	5	5	0	0.9	6.0	35.4	57.7
2. Extensive bonus system	4.20	4	5	0.5	2.3	22.8	25.1	49.3
3. Precise path of promotion and professional career	4.16	4	5	1.4	3.7	17.7	32.1	45.1
4. Development possibilities	4.16	4	5	1.9	3.3	13.0	40.4	41.4
5. Incentive programme (e.g. multisport)	3.81	4	5	3.7	11.2	19.5	31.2	34.4
6. Additional benefits (phone, laptop, car, parking)	3.92	4	5	3.3	12.0	13.5	29.8	41.4
7. Relationships and work ambience	4.59	5	5	0.5	0.9	5.2	26.0	67.4
8. Integration trips, employee meetings	3.87	4	5	4.7	11.6	17.7	23.7	42.3
9. Leadership style	4.19	4	5	1.9	4.2	16.7	27.4	49.8
10. Flexible working hours	4.26	4	5	0.5	4.7	13.5	31.6	49.7
11. Possibility to work remotely	4.04	4	5	3.3	6.5	18.1	27.0	45.1
11. The company's position on the market	3.89	4	5	3.7	10.2	15.3	34.4	36.3
13. Equipping the company with modern technologies	4.00	4	5	2.8	9.3	15.8	29.3	42.8
14. Team age (work in a team of peers)	3.87	4	5	6.0	8.8	13.5	34.9	36.7
15. Work in line with your interests	4.26	4	5	0.5	2.3	14.4	36.3	46.5
16. Work in line with education	3.80	4	5	6.0	12.6	14.0	30.7	36.7
17. Co-decision-making	4.20	4	5	0.9	5.6	11.6	36.3	45.6
18. A detailed list of duties and tasks	4.15	4	5	0.5	2.3	14.4	36.3	46.5
19. No overburdening the workplace with tasks	3.98	4	5	1.4	7.9	23.7	25.1	41.9
20. No exploitation or over-exploitation	4.47	5	5	0.9	5.6	11.6	36.3	45.6
21. A sense of acceptance and belonging to a group	4.26	4	5	1.4	3.7	20.0	28.4	46.5
22. Work stability	4.3	4	5	0.0	2.3	9.8	43.7	44.2
23. Additional healthcare	3.9	4	5	3.2	11.2	14.9	33.5	37.2
24. Company policy consistent with our worldview	3.86	4	5	2.8	12.5	17.7	29.8	37.2
25. Working conditions (premises, lighting, noise, etc.)	4.11	4	5	0.0	6.5	21.4	27.0	45.1
26. Compliance with the 8-hour working day	3.43	4	5	8.8	18.6	21.4	23.3	27.9

Notes: *N* – significance coefficient, *Me* – median, *Do* – mode; 1 – no significance, 2 – little importance, 3 – medium importance, 4 – very important, 5 – great importance.

Source: the authors.

The significance coefficient of as many as 16 of the 26 variables reached a value above 4. A small range of values makes it impossible to carry out a detailed interpretation and indicate those aspects that fundamentally affect Generation Z in the process of looking for a job and performing professional duties. In addition, identifying and assessing the factors that shape the approach to work is a highly complex, labour-intensive undertaking, and is not always reflected in practice. This problem can be addressed by reducing the original variables, while assigning them the appropriate ranks. This process drew on factor analysis, which simplified the complex structure to one that made it possible to assess the problem using a limited number of factors. For the procedure, a correlation matrix was built (Table 3), and then subjected to observation and further analysis. As a result, it was found that a large number of variables show interdependence with other variables. In practice, the correlation between two variables is assumed to be indistinct if $r_{xy} \leq 0.3$, medium when $0.3 < r_{xy} \leq 0.5$ and clear if $r_{xy} > 0.5$ (Ignatczyk & Chromińska, 2004, p. 170).

Analysis of the data in the matrix showed that a special degree of interdependence occurs between such variables as:

- extensive bonus system with a defined promotion and career path (0.48), financing education, courses, workshops as a means to development (0.43) and additional benefits resulting from the position held (0.32),
- defined path of promotion and professional career with the possibility for development by means of financing education, courses, workshops (0.46), the company's position on the market (0.3) and job stability (0.3),
- development by means of financing education, courses, workshops, with incentive programmes (0.47), additional benefits resulting from the position held (0.43),
- incentive programmes with additional benefits resulting from the position (0.54), integration trips and non-company employee meetings (0.34), and additional health care (0.37),
- additional benefits with integration trips and non-corporate employee meetings (0.34),
- relationships and atmosphere at work with integration trips (0.39), management style (0.4), sense of acceptance and belonging to a group (0.4) and company policy in terms of consistency with one's worldview (0.36),
- leadership style with the company's position on the market (0.31), the ability to co-decide about the company's development (0.31) and physical working conditions (0.33),
- flexible working hours with the possibility of remote work (0.58), equipping the company with modern technologies (0.34), the possibility to work on a team of employees of similar age (0.34),
- option of working remotely and the level of technology in the company (0.34),

- the company’s position on the market and the level of technology it uses (0.5), work in line with education (0.33), physical working conditions (0.3),
- equipping the company with modern technologies and the possibility of working on a team of employees of a similar age (0.42), additional health care (0.36),
- specific list of duties, and no excessive workload (0.38) and no exploitation or excessive exploitation (0.4),
- lack of excessive burden from workplace tasks, and the lack of exploitation or excessive exploitation (0.55), sense of acceptance and belonging to a group (0.31), job stability (0.36), physical working conditions (0.3) and compliance with 8-hour working day (0.3),
- lack of exploitation or excessive exploitation with a sense of acceptance and belonging to a group (0.33), job stability (0.45),
- sense of acceptance and belonging to a group, job stability (0.4) and company policy in line with one’s worldview (0.35),
- company policy consistent with one’s worldview and physical working conditions (0.37).

A high and medium correlation means that the information contained in individual variables is duplicated numerous times. It also suggests that there is a hidden structure between the original elements that affects the individual factors. Factor analysis helped us reduce many primary variables to those which, from Gen Z’s point of view, have had the most significant impact on their behaviour in seeking and performing work. These factors contain synthetic information derived from the factors subjected to the original quantitative study.

Table 4. Eigenvalues of Synthetic Factors Obtained as a Result of Factor Analysis

Synthetic Factor	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇	...	F _n
Eigenvalue	5.72	2.02	1.93	1.7	1.53	1.38	1.05	...	26
% of explained variance	22.02	7.77	7.42	6.56	5.91	5.33	4.05	...	100
Cumulative eigenvalue	5.72	7.74	9.69	11.38	12.92	14.31	15.6	...	–
Cumulative % of variance	22.02	29.8	37.23	43.79	49.71	55.05	59.10	...	100

Source: the authors.

From Table 4, seven factors containing cumulative information, whose eigenvalue exceeds 1, will be qualified for further work. The first isolated factor explains over 22%, the second almost 8%, the third over 7%, and the next four a total of 21.8% of the total variance. This means that the seven isolated factors together explain over 59% of the discussed phenomena, and the remaining 19 ones about 41%. It can therefore be assumed that the analysis of other factors is unnecessary. To confirm the correctness of the selection of seven factors, Cattell scree criterion

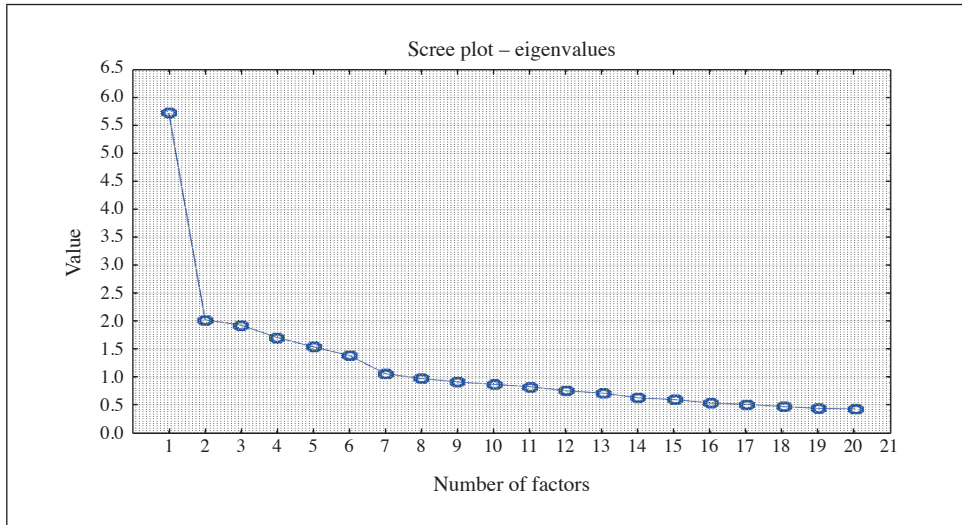


Fig. 1. Cattell Scree

Source: the authors.

was used, and graphically determines the selection point (Fig. 1). A mild decrease in the eigenvalues means that the other factors constitute the so-called factorial scree.

Transforming the original correlation matrix yielded a new matrix of raw factor loadings. It was then rotated using the Varimax method. Using principal components, the factors were extracted in such a way that successive factors with cumulative information were responsible for a smaller and smaller range of variance. This procedure made it possible to reduce the primary variables (subjected to the study) to the group of seven most important factors – those that are taken into account by Generation Z in their search for and performance of work. All the selected factors are characterised by a very high charge value (correlation), which ranges from 0.89 to 0.97. The values of rotated factor loads are presented in Table 5.

The analysis shows that the most important factor Generation Z considers when looking for and performing a job is flexible working hours ($R = 0.92$). It should be emphasised that this factor's eigenvalue is 5.7 and it explains over 22% of the problem. Having flexible working hours means being able to adjust working hours to one's individual needs and preferences. In practice, three options can be used. The first specifies the time period in which the employee must start work. The second specifies the different start and end times of work. And the third specifies the number of hours that must be worked in a week or month. Many Gen Zers do not necessarily want to work in a specific location, but to do hybrid work or work remotely from anywhere in the world. The respondents indicated that such an option allows them to maintain a balance between their professional and private lives. They also believe

Table 5. Matrix of Factor Loadings after Rotation

Variable	Rotated Factor Loads						
	Factor						
	1	2	3	4	5	6	7
Remuneration adequate to commitment	0.01	0.02	0.00	0.97	0.01	0.00	0.06
Extensive bonus system	0.08	0.06	0.12	0.14	0.05	0.05	0.04
Precise path of promotion and professional career	-0.02	0.07	0.08	0.08	0.03	0.08	0.10
Development possibilities (funding of studies, courses)	0.06	0.08	0.19	0.07	0.08	0.12	0.10
Incentive programme (e.g. multisport)	0.01	0.03	0.25	0.02	0.04	0.15	0.01
Additional benefits (work phone, laptop, car, parking, etc.)	0.03	-0.02	0.92	0.00	0.06	0.09	-0.04
Relationships and work ambience	0.05	0.07	0.06	0.01	0.92	0.02	0.09
Integration trips, employee meetings	0.06	-0.04	0.13	-0.01	0.16	0.05	-0.01
Leadership style	0.04	0.06	0.01	0.07	0.17	0.05	0.09
Flexible working hours	0.92	0.01	0.03	0.01	0.05	0.00	0.02
Can work remotely	0.29	0.09	0.08	0.03	0.04	-0.01	0.07
The company's position on the market	0.07	-0.04	-0.02	0.12	0.04	0.12	0.07
Equipping the company with modern technologies	0.13	0.02	0.02	0.12	0.02	0.14	0.03
Team age (work in a team of peers)	0.12	0.04	0.04	-0.06	0.03	0.10	0.11
Work in line with your interests	0.02	0.03	-0.03	0.06	0.08	-0.04	0.95
Work in line with education	0.05	0.01	-0.03	-0.03	0.04	0.11	0.08
Co-decision-making	0.07	0.02	0.01	0.07	0.00	0.05	0.05
A detailed list of duties and tasks	0.00	0.15	0.06	0.05	0.02	0.03	0.05
No overburdening the workplace with tasks	0.02	0.24	0.06	0.00	0.06	0.10	0.05
No exploitation or over-exploitation	0.01	0.89	-0.02	0.02	0.08	0.03	0.03
A sense of acceptance and belonging to a group	-0.03	0.11	0.04	0.01	0.17	0.08	0.04
Work stability	0.01	0.17	0.00	0.01	0.09	0.12	0.01
Additional healthcare	0.00	0.03	0.10	0.00	0.03	0.91	-0.05
Company policy consistent with our worldview	-0.01	0.05	0.05	0.02	0.14	0.10	0.13
Working conditions (premises, lighting, noise, etc.)	0.09	0.06	0.03	0.05	0.04	0.04	0.09
Compliance with the 8-hour working day	0.06	0.06	0.06	-0.09	0.05	0.07	-0.07

Notes: Numbers in bold indicate loads above 0.85.

Source: the authors.

that flexible working hours should improve productivity as it enables time management, mobility and reduced absenteeism. Relaxing strict working hours also affects psychological comfort, improved well-being, and causing less stress.

The second factor, with an eigenvalue of 2 and explaining almost 8% of the problem, concerns the fear of excessive exploitation by employers ($R = 0.89$). Most of the participants in the study have work experience, mainly in trade and services, where they encountered a range of discrimination – from lowering the salary, requiring unpaid work or low-paid overtime, and giving additional duties not related to the work performed, to name three. It is very difficult to fight against such behaviours as there are no appropriate institutions would deal with such matters quickly and actively. Therefore, when looking for a job, this has caused Gen Zers to collect and exchange information about potential employers. Where reviews are negative, they look for further offers that suit their remuneration and other needs.

Various types of non-wage benefits constituted another important factor ($R = 0.92$). The eigenvalue here was 1.92, with the factor explaining 7.5% of the variance. The respondents indicated that electronic gadgets, such as a branded business phones and laptops, as well as co-financing for formal education and other trainings that will help improve qualifications, are particularly important. They are followed by a car, parking lot, healthcare, and insurance. These elements help boost the loyalty of Gen Z, which generally does not forge long-term relationships with employers.

Adequate remuneration ($R = 0.97$), with an eigenvalue of 1.7, is in fourth place, and explains 6.5% of the variance. The qualitative study did not indicate specific salary ranges, but it was noted that remuneration must adequately reflect the work performed. It should also be sufficient to enable self-development, dreams to be pursued, a hobby or physical activity. At the same time, when looking for a job, members of this generation tends to consider only those offers that clearly specify the level of remuneration and the scope of duties. Finally, one threat that may destabilise the Polish employers' market is the relatively high interest Gen Z has shown in economic emigration.

Another important factor Gen Z considers when looking for and performing work is relationships and the atmosphere at the workplace ($R = 0.92$). With an eigenvalue of 1.53, the factor accounts for 5.5% of the variance. According to the respondents, the atmosphere at work should be relatively loose, ensuring that employees have freedom and independence in performing their work. Relations between people should be based on trust, commitment, cooperation, lack of unhealthy competition, and a sense of belonging to a group. In addition, Gen Z counts on receiving mutual help, kindness, understanding and appreciation. They also emphasised that the atmosphere and relationships fundamentally contribute to engagement at work, thus increasing productivity.

Additional healthcare is the sixth factor ($R = 0.91$), with an eigenvalue of 1.38. This factor explains the problem in more than 5%. It is worth noting that this factor is treated individually by the surveyed group, as one of the previous factors was additional benefits, which also include healthcare. The importance of the factor may

be due to the fact that the study was conducted after the pandemic, during which many people became aware of health risks and dangers.

The last factor with an eigenvalue above 1 was work in line with one's interests ($R = 0.95$), though it accounted for only 4% of Gen Z's most pressing concerns about work. Work in line with one's interests means that the scope of the duties assigned will be compatible with activities or actions that contribute to satisfaction, self-satisfaction and, in many cases, alignment with non-professional interests. In practice, however, it is difficult to provide all employees with work in line with their passions and hobbies. This can mean that Gen Zers are relatively rarely attached to the workplace, change jobs frequently and do not identify with the company much at all.

5. Conclusions

Each generation entering the labour market has unique preferences which encourage it to undertake professional activity. It may be a tendency to consume, or a propensity to save and raise capital, or to strike a balance between one's professional life and work. The differences are to some degree attributable to the conditions the generation grew up with, what they learned and how they gained experience. From the point of view of modern enterprises, today's youngest generation, Generation Z, is particularly important. It is replacing the baby boomers, which is currently exiting the labour market. Gen Z's approach to work differs radically from previous generations. It has forced companies to constantly analyse their behaviour, implement ongoing changes, and adapted recruitment and motivation to its needs and preferences. If they are not monitored, the company may have problems with filling positions, because no one will want to work in an unsuitable or unfavourable environment. This is because Gen Z values freedom, mobility and flexibility as fundamental values. The study presented in this paper showed that three factors are particularly important: flexibility (especially the ability to work in hybrid mode or remotely), a strictly defined scope of duties (one that prevents excessive exploitation) and other benefits, primarily of a technological nature. Remuneration, atmosphere at work, healthcare and work in line with interests were found to be less important factors. These factors to some extent correspond with other studies conducted in different centers.

At the same time, the research presented herein is not without limitations. Primarily, the study was conducted on a sample of 428 students, which may limit the ability to generalise the results to Generation Z as a whole, especially as students have limited professional experience. This factor may have influenced their perceptions and priorities regarding work. Including individuals with more diverse and extensive professional experience could provide a more comprehensive understanding of Generation Z's approach to work.

Another limitation was the non-random and purposive sampling method, which may have affected the representativeness of the results. The survey was mainly based on participants' self-assessment using a 5-point Likert scale, which may introduce subjectivity and limitations related to the interpretation of individual issues. Variable assessments focus on respondents' declarative preferences and expectations, which may differ from actual labour market behavior, where various factors may influence decisions and attitudes in a more dynamic and comprehensive way.

The geographical and cultural contexts of the study also posed a significant limitation. It was conducted in a specific region and time, which may not reflect differences and changes in other regions or in the future. Additionally, the study might have been influenced by the specific social and economic conditions of the post-pandemic period, which may not be fully representative of long-term trends.

The data analysis was conducted using factor analysis, which, while allowing for the reduction of the number of variables, may lead to a loss of some information and the complexity of the actual impact of the factors under consideration. Furthermore, the study assumed that a high correlation between variables indicates their interdependence; however, some relationships may be more complex and not always linear, which can limit the interpretation of the results.

Due to certain methodological limitations, the results obtained in the study do not provide a basis for generalising these results to all representatives of Generation Z. They apply only to the group under consideration. Therefore, some factors may not have been recognised or their impact may differ from that indicated in the study. Further research is necessary, including qualitative studies on more diverse samples with greater professional experience, and conducted in various geographical and cultural contexts. It is also worth mentioning that in a few years Generation Alpha will enter the labour market. The behaviours, entitlement, directness and digital mobility of its members will be of keen interest to various research groups.

Authors' Contribution

The authors' individual contribution is as follows: Dariusz Nowak 40%, Emil Nikolov 30%, Joanna Wiśniewska 30%.

Conflict of Interest

The authors declare no conflict of interest.

References

Beer, P., & Mulder, R. H. (2020). The Effects of Technological Developments on Work and Their Implications for Continuous Vocational Education and Training: A Systematic Review. *Frontiers in Psychology, 11*, 918. <https://doi.org/10.3389/fpsyg.2020.00918>

- Benítez-Márquez, M. D., Sánchez-Teba, E. M., Bermúdez-González, G., & Núñez-Rydman, E. S. (2022). Generation Z within the Workforce and in the Workplace: A Bibliometric Analysis. *Frontiers in Psychology, 12*, 736820. <https://doi.org/10.3389/fpsyg.2021.736820>
- Bieleń, M., & Kubiczek, J. (2020). Response of the Labor Market to the Needs and Expectations of Generation Z. *e-mentor, 4*(86), 87–94. <https://doi.org/10.15219/em86.1486>
- Bridges, T. (2015). *5 Ways the Workplace Needs to Change to Get the Most out of Generation Z*. Retrieved from: <https://www.fastcoexist.com/3049848/5-ways-the-workplaceneeds-to-change-to-get-the-most-out-of-generation-z> (accessed: May 2023).
- Chillakuri, B., & Mahanandia, R. (2018). Generation Z Entering the Workforce: The Need for Sustainable Strategies in Maximizing Their Talent. *Human Resource Management International Digest, 26*(4), 34–38. <https://doi.org/10.1108/HRMID-01-2018-0006>
- Csiszárík-Kocsír, Á., & Garia-Fodor, M. (2018). Motivation Analysing and Preference System of Choosing a Workplace as Segmentation Criteria Based on a Country Wide Research Result Focus on Generation of Z. *On-line Journal Modelling the New Europe, 27*, 67–85. <https://doi.org/10.24193/OJMNE.2018.27.03>
- Dolot, A. (2018). The Characteristics of Generation Z. *e-mentor, 2*(74), 44–50. <https://doi.org/10.15219/em74.1351>
- Gaidhani, S., Arora, L., & Sharma, B. K. (2019). Understanding the Attitude of Generation Z towards Workplace. *International Journal of Management, Technology and Engineering, 9*(1), 2804–2812.
- Georgieva Zh., & Atanasova, V. (2015). *Edno izsledvane na predpriemacheskite umenia u "digitalnoto pokolenie" zet. Obrazovaniето – faktor za ikonomicheski rastezh i razvitie na choveshkia kapita* (Vol. 8). Visshe uchilishte po menidzhmant.
- Ignatczyk, W., & Chromińska, M. (2004). *Statystyka. Teoria i zastosowanie*. Wydawnictwo Wyższej Szkoły Bankowej.
- Kapil, Y., & Roy, A. (2014). A Critical Evaluation of Generation Z at Workplaces. *International Journal of Social Relevance & Concern, 2*(1), 10–14.
- Kovacheva, S. (2012). *Balansat mezhdu rabotata i semeystvoto*. Izdatelstvo Iztok-Zapad.
- Kukla, D., & Nowacka, M. (2019). Charakterystyka podejścia do pracy przedstawicieli pokolenia Z – praca w systemie wartości młodych. Cz. 1. *Polish Journal of Continuing Education, 3*, 120–130. <https://doi.org/10.34866/j3z5-5633>
- Lanier, K. (2017). 5 Things HR Professionals Need to Know about Generation Z: Thought Leaders Share Their Views on the HR Profession and Its Direction for the Future. *Strategic HR Review, 16*(6), 288–290. <https://doi.org/10.1108/SHR-08-2017-0051>
- Levickaitė, R. (2010). Generations X, Y, Z: How Social Networks Form the Concept of the World without Borders (the Case of Lithuania). *Creativity Studies, 3*(2), 170–183. <https://doi.org/10.3846/limes.2010.17>
- Magano, J., Silva, C., Figueiredo, C., Vitória, A., Nogueira, T., & Pimenta Dinis, M. A. (2020). Generation Z: Fitting Project Management Soft Skills Competencies – a Mixed-method Approach. *Education Science, 10*(7), 187. <https://doi.org/10.3390/educsci10070187>

- Mahand, T., & Caldwell, C. (2023). Quiet Quitting – Causes and Opportunities. *Business and Management Research*, 12(1), 9–19. <https://doi.org/10.5430/bmr.v12n1p9>
- Mihelich, M. (2013). Another Generation Rises: Looking beyond the Millennials. Retrieved from: <https://workforce.com/news/another-generation-rises-looking-beyondthe-millennials> (accessed: 24.05.2023).
- Ochis, K. (2024). Generation Z and “Quiet Quitting”: Rethinking Onboarding in an Era of Employee Disengagement. *Multidisciplinary Business Review*, 17(1), 83–97. <https://doi.org/10.35692/07183992.17.1.7>
- Öztürk, E., Arıkan, Ö. U., & Ocak, N. (2023). Understanding Quiet Quitting: Triggers, Antecedents and Consequences. *International Journal of Behavior, Sustainability and Management*, 10(18), 57–79. <https://doi.org/10.54709/jobesam.1299018>
- Racolta-Paina, N. D., & Irini, R. D. (2021). Generation Z in the Workplace through the Lenses of Human Resource Professionals – a Qualitative Study. *Quality – Access to Success*, 22(183), 78–85.
- Roach, B., Goodwin, N., & Nelson, J. (2019). *Consumption and the Consumer Society*. Global Development and Environment Institute, Tufts University.
- Sirgy, M. J., & Lee, D. J. (2018). Work-life Balance: An Integrative Review. *Applied Research Quality Life*, 13, 229–254. <https://doi.org/10.1007/s11482-017-9509-8>
- Tsetsegmaa, Ts., Enkhbayar, Ch., & Altanchimeg, Z. (2019). Relation to Labor and Employment Form of X, Y, Z Generations: Similarities and Differences. *International Research Journal*, 5(83), 6–10. <https://doi.org/10.23670/IRJ.2019.83.5.028>
- Urick, M. J., Hollensbe, E. C., Masterson, S. S., & Lyons, S. T. (2017). Understanding and Managing Intergenerational Conflict: An Examination of Influences and Strategies. *Work, Aging and Retirement*, 3(2), 166–185. <https://doi.org/10.1093/workar/waw009>
- Workforce Institute. (2019). *Full Report: Generation Z in the Workplace*. Retrieved from: <https://workforceinstitute.org/wp-content/uploads/2019/11/Full-Report-Generation-Z-in-the-Workplace.pdf> (accessed: May 2023).
- Zheley, Zh., & Iliev, D. (2023). Predizvikatelstva pred digitalnoto prepodavane na pokolenie Z. In: *Digitalna transformatsia na obrazovaniето – problemi i reshenia, otsenyavane i akreditatsia*. Rusenski universitet.

KREM, 2025, 1(1007): 189–204
ISSN 1898-6447
e-ISSN 2545-3238
<https://doi.org/10.15678/krem.13660>

Różnorodność płci w raportach zrównoważonego rozwoju w Polsce

Gender Diversity in Sustainability Reports:
Evidence from Poland

Hanna Czaja-Cieszyńska

Uniwersytet Szczeciński, Instytut Ekonomii i Finansów, Katedra Rachunkowości, ul. Mickiewicza 64,
71-101 Szczecin, Polska, e-mail: hanna.czaja-cieszynska@usz.edu.pl,
ORCID: <https://orcid.org/0000-0002-6425-9519>

Artykuł udostępniany na licencji Creative Commons Uznanie autorstwa 4.0 (CC BY 4.0); <https://creativecommons.org/licenses/by/4.0/>

Sugerowane cytowanie: Czaja-Cieszyńska, H. (2025). Różnorodność płci w raportach zrównoważonego rozwoju w Polsce. *Krakow Review of Economics and Management / Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(1007), 189–204. <https://doi.org/10.15678/krem.13660>

ABSTRACT

Objective: The aim of the article is to assess reports on sustainable development of listed companies in Poland from the perspective of disclosures on gender diversity.

Research Design & Methods: The study covered 100 reports on sustainable development of companies included in the WIG20 index. The time range of the study covered the years 2017–2021. The first stage of the research consisted of conducting a quantitative analysis of the disclosures and companies accepted for the study. The second aimed to analyse the dynamics of changes in disclosures on gender diversity.

Findings: The empirical study conducted indicates that from 2017 to 2021 the number of disclosures regarding gender diversity in Poland increased. In each year the number of published disclosures was higher than in the previous year, although there are disclosures that recorded decreases during the period under review. An example may be 404-1-1-2: the number of hours of training that employees underwent by gender and the group of disclosures regarding parental leave, for which the dynamics indexes showed values lower than 1.

Implications/Recommendations: It was noticed that companies that appeared for the first time in the WIG20 index in the first year, were characterised by a small number of disclosures, which increased in subsequent years. On the other hand, the companies included in the index presented a relatively large range of disclosures throughout the period analysed, which resulted from their experience of preparing ESG reports. The research sample consisted of 20 listed companies, the time range of the study covered the years 2017–2021, therefore the results obtained cannot be generalised to the entire population.

Contribution: The article fits into the current trend of research conducted in the area of sustainable development reporting. Using statistical indexes, the dynamics of the development of gender diversity disclosures in ESG reports in Poland after 2017 was assessed. The obtained results may prove interesting both for the scientific community and for the entities which were subjects of the research.

Article type: original article.

Keywords: sustainability reports, gender diversity, non-financial disclosures, GRI Standards, ESG.

JEL Classification: M41.

1. Wprowadzenie

Równość między kobietami i mężczyznami jest jednym z praw podstawowych, zagwarantowanych w art. 2 Traktatu o Unii Europejskiej oraz w art. 23 Karty praw podstawowych Unii Europejskiej. Mimo że w ciągu ostatnich dziesięcioleci Europa poczyniła znaczne postępy w równouprawnieniu płci, to z najnowszego raportu Europejskiego Instytutu ds. Równości Kobiet i Mężczyzn (EIGE, 2022) wynika, że wśród zasiadających w organach zarządczych spółek w UE kobiety stanowią tylko 31,5%, a wśród sprawujących w nich funkcję prezesa – zaledwie 8%. To powoduje, że problematyka nierównowagi płci w biznesie jest wciąż aktualna i ważna. Przedmiotem niniejszych rozważań nie jest jednak dyskryminacja ze względu na płeć, a zakres ujawnień na temat różnorodności płci spółki w raportach zrównoważonego rozwoju.

W Polsce raportowanie działań na rzecz zrównoważonego rozwoju jest obowiązkowe od 2017 r. dla tzw. jednostek zaufania publicznego, w których przez dwa kolejne lata średnioroczne zatrudnienie wyniosło powyżej 500 osób oraz spełnione zostało jedno z dwóch kryteriów finansowych, tj. suma bilansowa przekroczyła 85 mln zł lub przychody netto ze sprzedaży towarów i produktów przekroczyły 170 mln zł (Ustawa z dnia 29 września 1994 r. o rachunkowości, Dz.U. 2023, poz. 120 ze zm., art. 49b, ust. 1). Należy jednak podkreślić, że wraz z wejściem w życie nowej dyrektywy UE w sprawie sprawozdawczości przedsiębiorstw w zakresie zrównoważonego rozwoju (CSRD, 2022) obowiązek takiego raporto-

wania od 2025 r. będzie dotyczył wszystkich dużych jednostek, zarówno notowanych, jak i nienotowanych, oraz od 2026 r. małych i średnich spółek giełdowych. Zakres podmiotowy spółek zobligowanych do raportowania działań na rzecz zrównoważonego rozwoju będzie zatem z roku na rok coraz większy.

W literaturze wskazuje się na różne czynniki warunkujące ilość i jakość prezentowanych w raportach ujawnień. Za przykład może posłużyć wielkość przedsiębiorstwa mierzona jego sumą bilansową, wysokością przychodów lub zatrudnieniem (Oliveira, Lima Rodrigues i Craig, 2006; Rahman, Ahmed i Hassan, 2017), wartość rynkowa spółki (Li i in., 2018; Tsang i in., 2024) czy czynniki o charakterze politycznym, społecznym lub kulturowym (Ali, Frynas i Mahmood, 2017). Nie brakuje także głosów, że wpływ na zakres informacji prezentowanych w raportach zrównoważonego rozwoju ma również doświadczenie spółki w raportowaniu. Tę zależność dostrzegają m.in.: A. A. Onoja, E. I. Okoye i U. J. Nwoye (2021), E. Lippai-Makra, Z. I. Kovács i G. D. Kiss (2022), R. Mazzotta, G. Bronzetti i S. Veltri, (2020) oraz E. Zarzycka i J. Krasodomska (2022).

Badania dotyczące raportowania działań na rzecz zrównoważonego rozwoju w głównej mierze skoncentrowane są wokół trzech głównych grup ujawnień: środowiskowych, społecznych i ładu korporacyjnego (*environmental* – E, *social* – S, *governance* – G; ESG). Zostały one w literaturze szeroko opisane. Znacznie mniej uwagi poświęca się ujawnieniom szczegółowym, np. na temat różnorodności płci. To skłoniło autorkę do podjęcia właśnie tej tematyki.

Celem głównym artykułu jest ocena raportów zrównoważonego rozwoju spółek giełdowych w Polsce z perspektywy ujawnień na temat różnorodności płci. Do badania wybrano 20 największych pod względem kapitalizacji rynkowej spółek giełdowych wchodzących w skład indeksu WIG20. Badaniem objęto 100 raportów. Zakres czasowy badania to lata 2017–2021. Realizacja celu głównego wymagała sformułowania następującej hipotezy badawczej: zakres ujawnień na temat różnorodności płci zależy od doświadczenia spółki w raportowaniu działań na rzecz zrównoważonego rozwoju.

Przeprowadzone badanie wpisuje się w nurt prowadzonych na świecie obecnie badań w zakresie raportowania działań na rzecz zrównoważonego rozwoju. Artykuł porusza bowiem istotny i aktualny problem, jakim jest dyskryminacja ze względu na płeć, i jest oryginalnym, praktycznym studium ujawnień na temat różnorodności płci w raportach ESG w Polsce. Uzyskane wyniki mogą okazać się interesujące zarówno dla środowiska naukowego, jak i dla badanych podmiotów.

Artykuł składa się z pięciu części. W części drugiej przedstawiono przegląd wyników dotychczasowych badań dotyczących raportowania ujawnień społecznych, w tym ujawnień na temat różnorodności płci. W trzeciej części zaprezentowano metodykę podjętych badań, tj. opisano próbę badawczą oraz etapy badań podporządkowane realizacji celu głównego i weryfikacji hipotezy badawczej. Następnie

omówiono wyniki badań empirycznych. Przedmiotem ostatniej części opracowania są wnioski.

W artykule wykorzystano następujące metody badawcze: przegląd literatury, analizę bibliometryczną, analizę treści (*content analysis*), wybrane metody statystyczne oraz – podczas formułowania wniosków – metody indukcji i syntezy.

2. Przegląd literatury

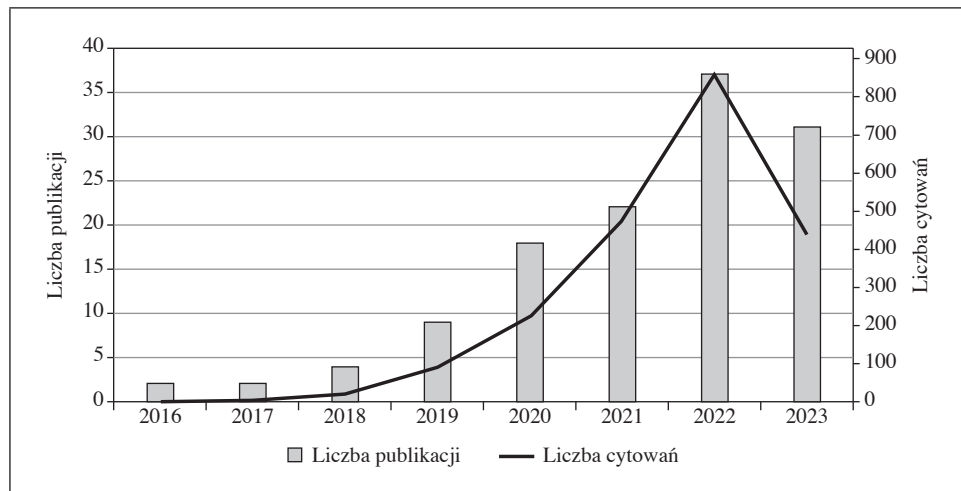
W ostatnich latach ujawnianie informacji z zakresu zrównoważonego rozwoju stało się światowym trendem i jest odpowiedzią na rosnące oczekiwania interesariuszy w zakresie szczegółowego, ale też wielowymiarowego informowania o działalności przedsiębiorstwa. Informacje te mogą mieć różny charakter: środowiskowy, społeczny i ładu korporacyjnego. Na temat ujawnień środowiskowych piszą m.in.: I. M. García-Sánchez i in. (2023), F. A. Goni i in. (2015) oraz J. Oláh i in. (2020). Publikacje o ujawnieniach społecznych to przede wszystkim opracowania następujących autorów: A. Di Vaio i in. (2020), H. E. Czaja-Cieszyńska i D. Kordela (2023), V. N. Amrutha i S. N. Geetha (2020). Z kolei kwestie ładu korporacyjnego omawiają m.in.: E. Harisa, M. Adam i I. Meutia (2019), S. Aureli i in. (2020), B. Zyznarska-Dworczak i K. Rudźcionienė (2022) oraz E. I. Szczepankiewicz i in. (2022).

W ostatnich latach powstało wiele publikacji dotyczących raportowania ESG. W bazie Web of Science (WoS) Core Collection jest ich ponad 1000. Tematyka odnosząca się do różnorodności płci jest zdecydowanie mniej popularna, co potwierdza przeprowadzona na potrzeby niniejszego artykułu analiza bibliometryczna. W bazie WoS wyszukano publikacje po słowach kluczowych w dwóch wariantach. Pierwsze zapytanie dotyczyło słów *gender diversity* (różnorodność płci) oraz ESG. Zidentyfikowano łącznie 125 rekordów. W wariancie drugim posłużono się słowami *gender diversity* oraz *sustainability reports* (raporty zrównoważonego rozwoju). Liczba publikacji wyniosła wtedy 217. W obu przypadkach zakres czasowy badania to lata 2009–2023 (w bazie WoS nie stwierdzono żadnych wcześniejszych publikacji o zadanej tematyce). Szczegółowe wyniki przeprowadzonej analizy bibliometrycznej przedstawiono na rys. 1 i 2.

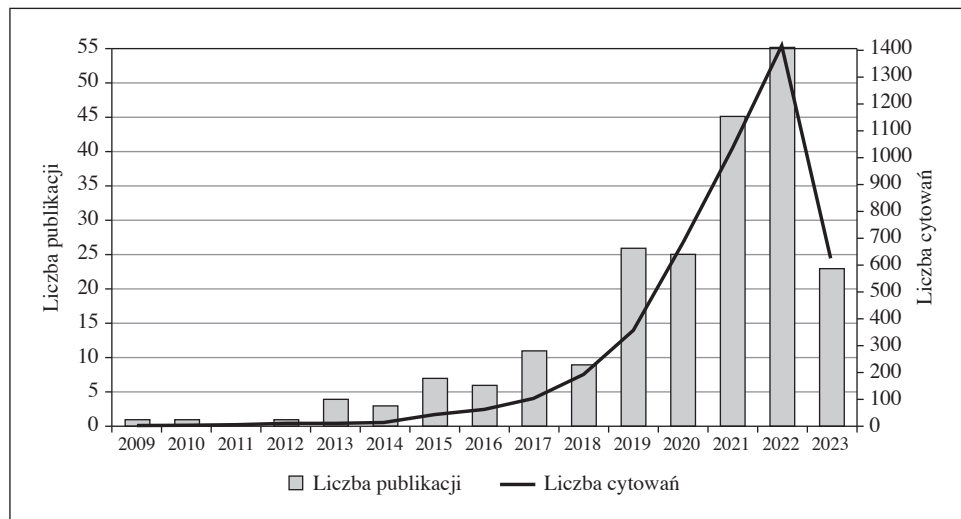
Szczegółowy przegląd literatury pozwolił na wskazanie dwóch głównych nurtów badawczych: 1) wpływ różnorodności płci w zarządzie na politykę spółki w zakresie ESG oraz 2) wyniki badań empirycznych, które pokazują doświadczenia spółek z różnych krajów w raportowaniu ujawnień na temat różnorodności płci.

Do pierwszej grupy publikacji należy np. praca C. Bosone, S. M. Bogliardi i P. Giudiciego (2022). Autorzy, opierając się na zbiorze danych dotyczących firm europejskich, udowodnili, że wzrost różnorodności płci ma pozytywny wpływ na wyniki finansowe firmy i jej udział w realizacji koncepcji zrównoważonego rozwoju. Z kolei R. Manita i in. (2018) zbadali 379 firm wchodzących w skład indeksu Standard and Poor's 500. Zakres czasowy badania objął lata 2010–2015,

a mimo to nie znaleziono istotnego związku między różnorodnością płci w zarządzie a ujawnianiem informacji na temat ESG.



Rys.1. Liczba publikacji i cytowań w bazie WoS dla słów kluczowych „gender diversity” oraz „ESG”
Źródło: opracowanie własne z wykorzystaniem danych pochodzących z bazy Web of Science (www.webofscience.com, dostęp: 2.06.2023).



Rys. 2. Liczba publikacji i cytowań w bazie Web of Science dla słów kluczowych „gender diversity” oraz „sustainability report”

Źródło: opracowanie własne z wykorzystaniem danych pochodzących z bazy Web of Science (www.webofscience.com, dostęp: 2.06.2023).

Wpływ zróżnicowania płci w zarządach i jego konsekwencje dla wyników w zakresie zrównoważonego rozwoju, mierzonych liczbą ujawnień na temat środowiska, spraw społecznych i zarządzania, analizowały również P. Yadav i A. Prashar (2023). Po zbadaniu 100 spółek z indyjskiej giełdy stwierdziły, że stosunkowo mały odsetek kobiet w zarządzie ma niewielki wpływ na wyniki ESG, ale kiedy w zarządzie zasiadają co najmniej trzy kobiety, wpływ ten staje się większy. Podobne badania prowadzili również S. Wasiuzzaman i V. Subramaniam (2023). Wykorzystali dane z 48 krajów, zarówno rozwiniętych, jak i rozwijających się, z lat 2004–2016. Z ich badań wynika, że kobiety w zarządzie korzystnie wpływają na jakość ujawnień, ale tylko w kategorii informacji środowiskowych i społecznych i tylko w krajach rozwiniętych. Z kolei T. Aabo i I. C. Giorici (2022) wykazali, że to, czy kobiety w zarządzie spółek mają znaczenie dla profilu ESG firmy, zależy przede wszystkim od danych użytych do analizy: w zależności od konkretnego dostawcy danych wyniki ESG dla tych samych firm są albo silnie i istotnie pozytywnie powiązane, albo w ogóle nie są powiązane.

Przedmiotem drugiej grupy publikacji są badania empiryczne, których wyniki pokazują doświadczenia spółek z różnych krajów i sektorów w raportowaniu ujawnień na temat różnorodności płci. O. Ferraro i E. Cristiano (2022) metodą studium przypadku zbadały pięć instytucji finansowych w celu przeanalizowania jakości informacji na temat różnorodności płci we Włoszech. Wyniki badania longitudinalnego jednoznacznie wskazały, że w ciągu pięciu lat objętych badaniem ujawnienia na temat różnorodności płci zwiększyły się do poziomu, który w pełni odzwierciedlał wymogi UE i Włoch. Kolejni badacze zastosowali podejście opisowe, dokumentacyjne i ilościowe. A. R. Albuquerque Filhói in. (2022) na podstawie 61 raportów zrównoważonego rozwoju opublikowanych w 2019 r. w bazie danych GRI stwierdzili, że ujawnienia na temat płci pozytywnie wiążą się ze zrównoważonym rozwojem brazylijskich firm. W ten sposób pokazali, że aby osiągnąć wyższy poziom zrównoważenia, spółki poszukują strategii konkurencyjnych, takich jak ujawnianie informacji dotyczących różnorodności płci. Zależność między zakresem raportowanych ujawnień a źródłem przewagi konkurencyjnej dostrzegły również S. Escamilla-Solano, J. Paule-Vianez i A. Blanco-González (2022). W ich badaniach informacje na temat polityki dotyczącej różnorodności płci zostały pozyskane za pomocą metody analizy treści. Przeanalizowano dane dotyczące 91 spółek notowanych na hiszpańskiej giełdzie z lat 2016–2018. Pozytywny związek między ujawnieniem polityki równouprawnienia płci a rentownością firmy potwierdziło zastosowanie podejścia opartego na danych panelowych.

Podsumowując, tematyka dotycząca różnorodności płci zyskuje na znaczeniu. Prowadzone w tym zakresie badania rzadko jednak dotyczą raportowania działań na rzecz zrównoważonego rozwoju. Według najlepszej wiedzy autorki w Polsce nie

opublikowano jeszcze wyników badań, które pokazywałyby zakres ujawnień na temat różnorodności płci prezentowanych w raportach ESG.

3. Metodyka badań

Przedmiotem badań były raporty zrównoważonego rozwoju spółek wchodzących w skład indeksu WIG20 w Polsce. WIG20 jest indeksem blue-chip, który obejmuje największe i najbardziej płynne spółki. W jego skład wchodzi 20 spółek reprezentujących następujące sektory: finanse, oprogramowanie, handel detaliczny, media, energetyka, przemysł surowcowy, przemysł paliwowy, telekomunikacja i ubezpieczenia. Zakres czasowy badania obejmuje raporty za lata 2017–2021. Rok 2017 jest pierwszym, w którym ujawnianie rozszerzonych informacji z zakresu zrównoważonego rozwoju stało się w Polsce obowiązkowe. Wykaz przyjętych do badania spółek przedstawiono w tabeli 1. Indeks WIG20 podlega czterem aktualizacjom w ciągu roku, w związku z tym jego skład na koniec każdego z badanych lat jest nieco inny.

Tabela 1. Skład indeksu WIG20 na dzień 31 grudnia danego roku

Lp.	Nazwa spółki	Tiker	Sektor	2017	2018	2019	2020	2021
1	Polski Koncern Naftowy Orlen	PKN	Paliwa	✓	✓	✓	✓	✓
2	Powszechna Kasa Oszczędności Bank Polski	PKO	Banki	✓	✓	✓	✓	✓
3	Bank Polska Kasa Opieki	PEO	Banki	✓	✓	✓	✓	✓
4	Powszechny Zakład Ubezpieczeń	PZU	Ubezpieczenia	✓	✓	✓	✓	✓
5	KGHM Polska Miedź	KGH	Górnictwo	✓	✓	✓	✓	✓
6	Santander Bank Polska	SPL	Banki	✓	✓	✓	✓	✓
7	PGE Polska Grupa Energetyczna	PGE	Energia	✓	✓	✓	✓	✓
8	Polskie Górnictwo Naftowe i Gazownictwo	PGN	Paliwa	✓	✓	✓	✓	✓
9	LPP	LPP	Odzież i kosmetyki	✓	✓	✓	✓	✓
10	Cyfrowy Polsat	CPS	Telekomunikacja	✓	✓	✓	✓	
11	CCC	CCC	Odzież i kosmetyki	✓	✓	✓	✓	✓

cd. tabeli 1

Lp.	Nazwa spółki	Tiker	Sektor	2017	2018	2019	2020	2021
12	mBank	MBK	Banki	✓	✓	✓		✓
13	Alior Bank	ALR	Banki	✓	✓	✓	✓	✓
14	Orange Polska	OPL	Telekomunikacja	✓	✓	✓	✓	✓
15	Grupa Lotos	LTS	Paliwa	✓	✓	✓	✓	✓
16	Tauron Polska Energia	TPE	Energia	✓	✓	✓	✓	✓
17	Jastrzębska Spółka Węglowa	JSW	Górnictwo	✓	✓	✓	✓	✓
18	Eurocash	EUR	Artykuły spożywcze	✓	✓			
19	Asseco Poland	ACP	Informatyka	✓				
20	Energa	ENG	Energia	✓	✓			
21	Cd Projekt	CDR	Gry		✓	✓	✓	✓
22	Play Communications	PLY	Telekomunikacja			✓	✓	✓
23	Dino Polska	DNP	Artykuły spożywcze			✓	✓	✓
24	Allegro.eu	ALE	Handel internetowy				✓	✓
Razem				20	20	20	20	20

Źródło: opracowanie własne.

Badanie empiryczne oparto na metodzie analizy treści raportów zrównoważonego rozwoju. Łącznie przebadano 100 raportów. Materiał empiryczny pozyskano ze stron internetowych poszczególnych spółek. Aż 94 raporty były sporządzone z wykorzystaniem standardów GRI, dlatego właśnie te regulacje posłużyły jako wzorzec do dalszej analizy. Ujawnienia na temat różnorodności płci stanowią element ujawnień pracowniczych będących przedmiotem ujawnień społecznych. Wykaz 12 podstawowych i przyjętych do badania ujawnień rekomendowanych w standardach GRI zaprezentowano w tabeli 2.

Po zgromadzeniu materiału empirycznego badanie podzielono na dwa etapy. Pierwszy z nich polegał na przeprowadzeniu ilościowej analizy ujawnień na temat różnorodności płci w latach 2017–2021. Wyniki badań w ujęciu przedmiotowym i podmiotowym zostały zilustrowane na rys. 3–5. Drugi etap badań miał dać odpowiedź na pytanie, czy od 2017 r. zakres analizowanych ujawnień w raportach ESG zwiększył się, zmniejszył, czy też utrzymuje się na tym samym poziomie. W tym celu obliczono indywidualne indeksy dynamiki o stałej podstawie. Rokiem

Tabela 2. Wykaz ujawnień dotyczących różnorodności płci rekomendowanych w standardach GRI

Indeks	Wykaz
GRI 401 Zatrudnienie	401-1-1 Łączna liczba nowo zatrudnionych pracowników według grupy wiekowej i płci
	401-1-2 Liczba i wskaźnik rotacji pracowników według grup wiekowych i płci
GRI 401 Zatrudnienie	401-3-1 Łączna liczba pracowników, którzy mieli prawo do urlopu rodzicielskiego, według płci
	401-3-2 Łączna liczba pracowników, którzy skorzystali z urlopu rodzicielskiego, według płci
	401-3-3 Łączna liczba pracowników, którzy powrócili do pracy po zakończeniu urlopu rodzicielskiego, według płci
	401-3-4 Łączna liczba pracowników, którzy powrócili do pracy po zakończeniu urlopu rodzicielskiego i którzy nadal byli zatrudnieni 12 miesięcy po ich powrocie do pracy, według płci
	401-3-5 Wskaźniki powrotu do pracy i utrzymania pracowników, którzy skorzystali z urlopu rodzicielskiego, według płci
GRI 404 Szkolenia	404-1-1-2 Liczba godzin szkoleń, które przeszli pracownicy organizacji, według płci
	404-3 Odsetek wszystkich pracowników według płci i kategorii zaszczerowania pracowników, którzy zostali poddani regularnej ocenie wyników i rozwoju kariery
GRI 405 Różnorodność	405-1-1-1 Informacja o odsetku osób zasiadających w organach zarządzających spółki, według płci
	405-1-2-1 Informacja o odsetku pracowników ogółem w podziale na płeć
	405-2-1 Stosunek wynagrodzenia podstawowego i wynagrodzenia kobiet do wynagrodzenia mężczyzn

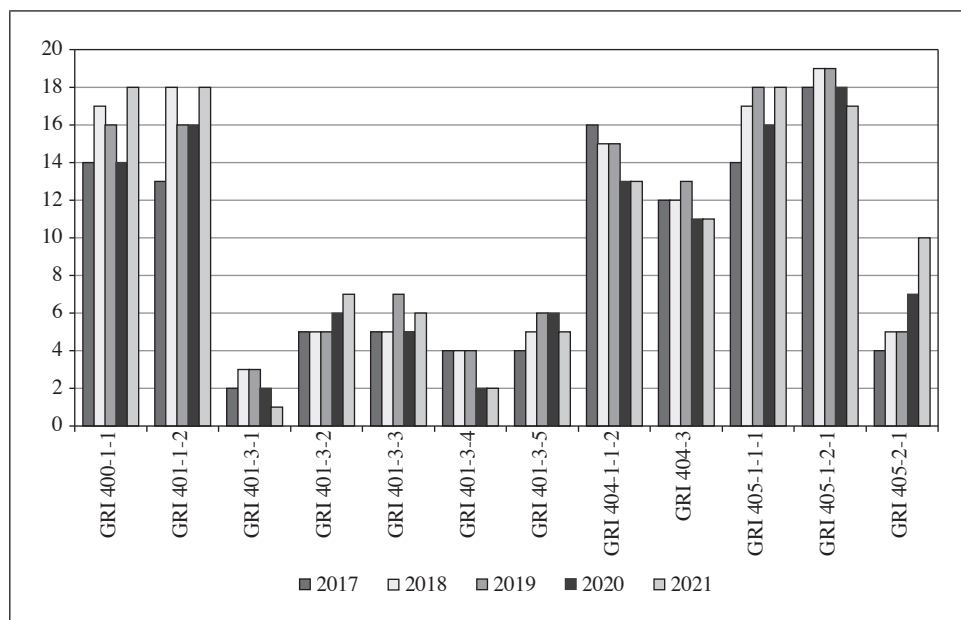
Źródło: opracowanie własne.

bazowym był rok 2017, wówczas bowiem opublikowane zostały pierwsze obowiązkowe raporty zrównoważonego rozwoju. Wyniki drugiego etapu badań zostały zaprezentowane w tabeli 3.

4. Wyniki badań

Pierwszy etap badań polegał na przeprowadzeniu ilościowej analizy ujawnień na temat różnorodności płci opublikowanych w raportach ESG spółek giełdowych wchodzących w skład indeksu WIG20 w latach 2017–2021. W ujęciu przedmiotowym najczęściej raportowane ujawnienia to: liczba nowo zatrudnionych pracowników według grupy wiekowej i płci (GRI 401-1-1), liczba i wskaźnik rotacji pracowników według grup wiekowych i płci (GRI 401-1-2), informacja o odsetku

pracowników ogółem w podziale na płeć (GRI 405-1-2-1) oraz informacja o odsetku osób zasiadających w organach zarządzających spółki według płci (GRI 405-1-1-1). Ujawnienia te były raportowane średnio przez 16 spółek. Najwięcej spółek, bo aż 19, opublikowało GRI 405-1-2-1. Najmniej ujawnień dotyczyło urlopu rodzicielskiego – ujawnienia z grupy GRI 401-3 były raportowane średnio przez 4–5 spółek. Szczegółowe wyniki badań z przedmiotowej analizy raportów w obszarze różnorodności płci przedstawiono na rys. 3.



Rys. 3. Liczba ujawnień na temat różnorodności płci – ujęcie przedmiotowe

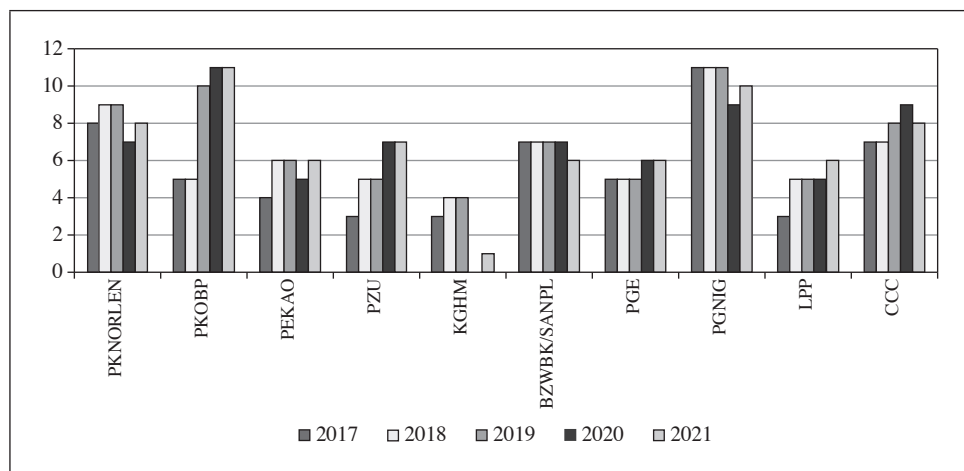
Objaśnienia: zob. wykaz ujawnień dotyczących różnorodności płci w tabeli 2.

Źródło: opracowanie własne.

W ujęciu podmiotowym analizie poddano łącznie 24 spółki. Wynika to z tego, że podczas aktualizacji składu indeksu WIG20 część mniejszych spółek wpadało i wypadało z indeksu. Na rys. 4 przedstawiono łączną liczbę ujawnień na temat różnorodności płci dla 10 spółek z największą kapitalizacją – tu zebrany materiał empiryczny jest kompletny. Natomiast na rys. 5 przedstawiono wyniki dla pozostałych 14 spółek, przy czym w tym przypadku zebrany materiał empiryczny jest niepełny.

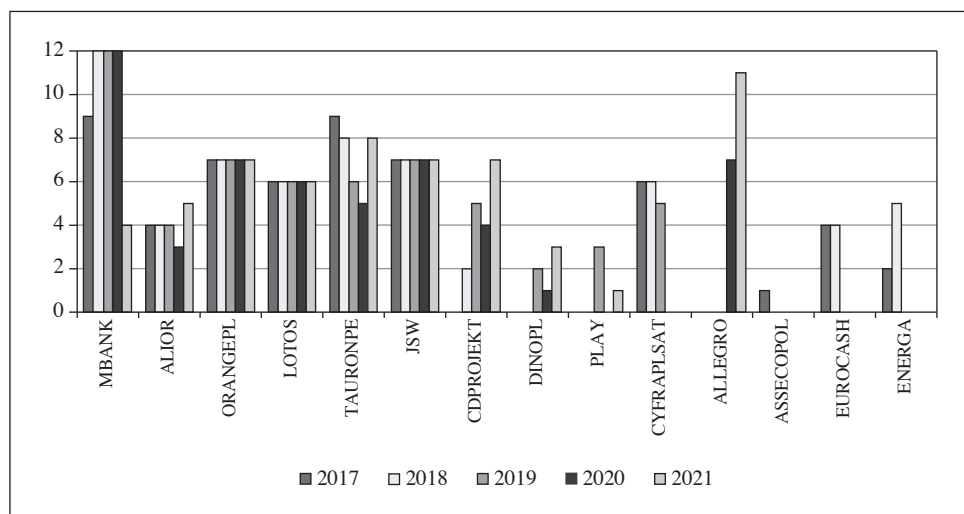
Spośród wszystkich spółek WIG20 najlepszy wynik uzyskało PGNiG, który średnio prezentował 10–12 ujawnień na temat różnorodności płci. Podobny zakres ujawnień po 2018 r. odnotowały też PKO BP oraz mBank (z wyjątkiem 2021 r.).

W przypadku pozostałych spółek średni zakres ujawnień wyniósł 6–8. Najślabiej wypadła spółka Dino Polska, która przez trzy kolejne lata, gdy wchodziła w skład indeksu WIG20, ujawniała średnio dwie informacje. Na wyróżnienie zasługuje z kolei spółka Allegro, która do indeksu WIG20 weszła dopiero w 2020 r. i wówczas pokazała w raporcie tylko 7 ujawnień, a w kolejnym roku już 11.



Rys. 4. Liczba ujawnień na temat różnorodności płci – ujęcie podmiotowe, cz. 1

Źródło: opracowanie własne.



Rys. 5. Liczba ujawnień na temat różnorodności płci – ujęcie podmiotowe, cz. 2

Źródło: opracowanie własne.

Podsumowując tę część badań, należy zauważyć, że od 2017 r. zakres prezentowanych informacji na temat różnorodności płci jest coraz większy. Wniosek ten potwierdza analiza ujawnień w ujęciu zarówno przedmiotowym, jak i podmiotowym.

Drugi etap badań empirycznych miał na celu analizę dynamiki zmian w ujawnianiu informacji na temat różnorodności płci w latach 2017–2021 (rok bazowy = 2017). Indywidualne indeksy dynamiki zostały przedstawione w tabeli 3.

Tabela 3. Indywidualne indeksy dynamiki o podstawie stałej dla ujawnień na temat różnorodności płci (rok bazowy = 2017)

Wyszczególnienie	2018	2019	2020	2021
GRI 400-1-1	1,214	1,143	1,000	1,286
GRI 401-1-2	1,385	1,231	1,231	1,385
GRI 401-3-1	1,500	1,500	1,000	0,500
GRI 401-3-2	1,000	1,000	1,200	1,400
GRI 401-3-3	1,000	1,400	1,000	1,200
GRI 401-3-4	1,000	1,000	0,500	0,500
GRI 401-3-5	1,250	1,500	1,500	1,250
GRI 404-1-1-2	0,938	0,938	0,813	0,813
GRI 404-3	1,000	1,083	0,917	0,917
GRI 405-1-1-1	1,214	1,286	1,143	1,286
GRI 405-1-2-1	1,056	1,056	1,000	0,944
GRI 405-2-1	1,250	1,250	1,750	2,500

Objaśnienia: jak do rys. 3. Szary poddruk oznacza, że te ujawnienia odnotowały spadek w stosunku do roku bazowego.

Źródło: opracowanie własne.

Przeprowadzona analiza dynamiki wskazuje jednoznacznie, że aż 7 z 12 ujawnień we wszystkich analizowanych latach odnotowało wzrost w stosunku do roku bazowego. Wyróżnia się w tej grupie z pewnością ujawnienie GRI 405-2-1, które w kolejnych latach wykazało dynamiczne wzrosty od 25% do aż 150%. Tylko jedno ujawnienie w całym badanym okresie wykazało spadek w stosunku do roku bazowego. Była to liczba godzin szkoleń, które przeszli pracownicy, według płci (GRI 404-1-1-2). Pozostałe trzy ujawnienia GRI: 401-3-4, 404-3 i 405-1-2-1, odnotowały spadek tylko w latach 2020 i 2021.

Podsumowując ten etap badań, należy wskazać, że indeksy dynamiki większe od 1, czyli oznaczające wzrost w stosunku do roku bazowego, wystąpiły 38 razy, podczas gdy mniejsze od 1, oznaczające spadek, wystąpiły tylko 10 razy. Oznacza to, że zakres ujawnień na temat różnorodności płci w badanym okresie zwiększył się.

5. Wnioski

Dyskryminacja ze względu na płeć, mimo że znacznie mniejsza niż jeszcze kilkanaście lat temu, nadal jest zjawiskiem powszechnie występującym w biznesie. Dlatego raportowanie ESG, w tym ujawnianie informacji na temat różnorodności płci, ma ogromne znaczenie dla praktyki zatrudniania i pracy. Po pierwsze, promowanie różnorodności płci w miejscu pracy jest krokiem w kierunku stworzenia bardziej inkluzywnego i równego środowiska pracy, co wpływa na reputację spółki. Po drugie, zwiększa przejrzystość jej działania, pokazuje kulturę organizacyjną oraz buduje zaufanie wśród obecnych i potencjalnych pracowników, klientów oraz innych interesariuszy. Z tego względu podejmowane są różne działania i inicjatywy legislacyjne mające na celu zwiększenie zakresu podmiotowego spółek objętych obowiązkowym raportowaniem ESG.

Na podstawie przeglądu literatury oraz badania własnego osiągnięto cel, jakim była analiza porównawcza raportów zrównoważonego rozwoju w Polsce pod kątem ujawnień na temat różnorodności płci za lata 2017–2021. Badaniem objęto spółki giełdowe wchodzące w skład indeksu WIG20; łącznie zbadano 100 raportów. Z przeprowadzonych badań wynika, że ujawnienia na temat różnorodności płci cieszą się dość dużą popularnością wśród analizowanych spółek. Z roku na rok zakres prezentowanych ujawnień jest coraz większy, chociaż są ujawnienia, które w badanym okresie odnotowały spadki. Za przykład może posłużyć liczba godzin szkoleń, które przeszli pracownicy, według płci oraz grupa ujawnień dotycząca urlopu rodzicielskiego, dla których indeksy dynamiki wykazały wartości mniejsze od 1. Niewystarczająca transparentność w obszarze różnorodności płci może być sygnałem do głębszej analizy praktyk danej spółki. W niektórych przypadkach może ona wynikać z indywidualnej strategii raportowania (brak świadomości społecznej odpowiedzialności biznesu, brak doświadczenia w raportowaniu, niewystarczający system informacji). W innych przypadkach można podejrzewać selekcję treści, czyli celowe wybiórcze prezentowanie informacji, aby poprawić wizerunek firmy – chęć ukrycia problemów wewnętrznych związanych z różnorodnością płci.

Zakres podmiotowy badań pozwolił ustalić, że wśród wszystkich spółek wchodzących w skład WIG20 najwięcej ujawnień na temat różnorodności płci zaprezentowała PGNiG, a najmniej Dino Polska. Jednocześnie zauważono, że spółki, które po raz pierwszy pojawiły się w indeksie WIG20, charakteryzowały się niewielkim zakresem ujawnień, który w kolejnych latach wzrastał. Z kolei spółki wchodzące w skład indeksu przez cały badany okres prezentowały relatywnie duży zakres ujawnień, co wynikało z ich doświadczenia w sporządzaniu raportów ESG. To pozwala potwierdzić hipotezę badawczą, zgodnie z którą zakres ujawnień na temat różnorodności płci zależy od doświadczenia spółki w raportowaniu działań na rzecz zrównoważonego rozwoju. Nie jest to jednak czynnik jedyny i decydujący. Zakres ujawnień na temat różnorodności płci jest także zależny m.in.: od wielkości

spółki, uwarunkowań kulturowych, stopnia rozwoju gospodarki danego kraju czy samej spółki.

Należy jednak podkreślić, że wnioskowanie na podstawie przeprowadzonych badań empirycznych ma pewne ograniczenia. Po pierwsze, badanie miało charakter pilotażowy i zostało przeprowadzone na stosunkowo małej próbie. Po drugie, zbadano raporty za lata 2017–2021, czyli po obowiązkowej transpozycji Dyrektywy 2014/95/EU. Interesujące mogłyby być badania na znacznie szerszą skalę w ujęciu podmiotowym, czasowym i przestrzennym. Wartościowe z punktu widzenia badań jakościowych byłoby również zastosowanie techniki indywidualnych wywiadów pogłębianych z osobami odpowiedzialnymi za sporządzanie raportów ESG.

Konflikt interesów

Autorka deklaruje brak konfliktu interesów.

Literatura

Aabo, T. i Giorici, I. C. (2022). Do Female CEOs Matter for ESG Scores? *Global Finance Journal*. <https://doi.org/10.2139/ssrn.4123530>

Albuquerque Filho, A. R., da Silva, B. P., da Silva, G. C., dos Santos Costa, G. C., da Silva Façanha, V. A. i Gomes, P. H. V. (2022). Influência do Disclosure de Gênero na Sustentabilidade Empresarial das Empresas Brasileiras. *NAVUS – Revista de Gestão e Tecnologia*, 12. <https://doi.org/10.22279/navus.2022.v12.p01-12.1686>

Ali, W., Frynas, J. G. i Mahmood, Z. (2017). Determinants of Corporate Social Responsibility (CSR) Disclosure in Developed and Developing Countries: A Literature Review. *Corporate Social Responsibility and Environmental Management*, 24(4), 273–294. <https://doi.org/10.1002/csr.1410>

Amrutha, V. N. i Geetha, S. N. (2020). A Systematic Review on Green Human Resource Management: Implications for Social Sustainability. *Journal of Cleaner Production*, 247, 119131. <https://doi.org/10.1016/j.jclepro.2019.119131>

Aureli, S., Del Baldo, M., Lombardi, R. i Nappo, F. (2020). Nonfinancial Reporting Regulation and Challenges in Sustainability Disclosure and Corporate Governance Practices. *Business Strategy and the Environment*, 29(6), 2392–2403. <https://doi.org/10.1002/bse.2509>

Bosone, C., Bogliardi, S. M. i Giudici, P. (2022). Are ESG Female? The Hidden Benefits of Female Presence on Sustainable Finance. *Review of Economic Analysis*, 14(2), 253–274. <https://doi.org/10.15353/rea.v14i2.5005>

CSRD. (2022). Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting. Official Journal of the European Union, L 322/15.

Czaja-Cieszyńska, H. E. i Kordela, D. (2023). Sustainability Reporting in Energy Companies – Is There a Link between Social Disclosures, the Experience and Market Value? *Energies*, 16(9), 3642. <https://doi.org/10.3390/en16093642>

Di Vaio, A., Palladino, R., Hassan, R. i Alvino, F. (2020). Human Resources Disclosure in the EU Directive 2014/95/EU Perspective: A Systematic Literature Review. *Journal of Cleaner Production*, 257, 120509. <https://doi.org/10.1016/j.jclepro.2020.120509>

Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups. Official Journal of the European Union, L 330/1.

EIGE. (2022). *Gender Equality Index 2022: The COVID-19 Pandemic and Care*. European Institute for Gender Equality.

Escamilla-Solano, S., Paule-Vianez, J. i Blanco-González, A. (2022). Disclosure of Gender Policies: Do They Affect Business Performance? *Heliyon*, 8(1), e08791. <https://doi.org/10.1016/j.heliyon.2022.e08791>

Ferraro, O. i Cristiano, E. (2022). Investigating the Quality of Gender Equality Non-financial Information Disclosed in the Cooperative Credit Sector: A Case Study. *Journal of Risk and Financial Management*, 15(12), 595. <https://doi.org/10.3390/jrfm15120595>

García-Sánchez, I. M., Ortiz-Martínez, E., Marín-Hernández, S. i Aibar-Guzmán, B. (2023). How Does the European Green Deal Affect the Disclosure of Environmental Information? *Corporate Social Responsibility and Environmental Management*, 30(6), 2766–2782. <https://doi.org/10.1002/csr.2514>

Goni, F. A., Shukor, S. A., Mukhtar, M. i Sahran, S. (2015). Environmental Sustainability: Research Growth and Trends. *Advanced Science Letters*, 21(2), 192–195. <https://doi.org/10.1166/asl.2015.5850>

Harisa, E., Adam, M. i Meutia, I. (2019). Effect of Quality of Good Corporate Governance Disclosure, Leverage and Firm Size on Profitability of Islamic Commercial Banks. *International Journal of Economics and Financial Issues*, 9(4), 189–196. <https://doi.org/10.32479/ijefi.8157>

Karta praw podstawowych Unii Europejskiej. Dz.Urz. UE 2016/C 202/02.

Li, Y., Gong, M., Zhang, X. Y. i Koh, L. (2018). The Impact of Environmental, Social, and Governance Disclosure on Firm Value: The Role of CEO Power. *The British Accounting Review*, 50(1), 60–75. <https://doi.org/10.1016/j.bar.2017.09.007>

Lippai-Makra, E., Kovács, Z. I. i Kiss, G. D. (2022). The Non-financial Reporting Practices of Hungarian Listed Public Interest Entities Considering the 2014/95/EU Directive. *Journal of Applied Accounting Research*, 23(1), 301–318. <https://doi.org/10.1108/JAAR-04-2021-0086>

Manita, R., Bruna, M. G., Dang, R. i Houanti, L. (2018). Board Gender Diversity and ESG Disclosure: Evidence from the USA. *Journal of Applied Accounting Research*, 19(2), 206–224. <https://doi.org/10.1108/JAAR-01-2017-0024>

- Mazzotta, R., Bronzetti, G. i Veltri, S. (2020). Are Mandatory Non-financial Disclosures Credible? Evidence from Italian Listed Companies. *Corporate Social Responsibility and Environmental Management*, 27(4), 1900–1913. <https://doi.org/10.1002/csr.1935>
- Oláh, J., Aburumman, N., Popp, J., Khan, M. A., Haddad, H. i Kitukutha, N. (2020). Impact of Industry 4.0 on Environmental Sustainability. *Sustainability*, 12(11), 4674. <https://doi.org/10.3390/su12114674>
- Oliveira, L., Lima Rodrigues, L. i Craig, R. (2006). Firm-specific Determinants of Intangibles Reporting: Evidence from the Portuguese Stock Market. *Journal of Human Resource Costing & Accounting*, 10(1), 11–33. <https://doi.org/10.1108/14013380610672657>
- Onoja, A. A., Okoye, E. I. i Nwoye, U. J. (2021). Global Reporting Initiative and Sustainability Reporting Practices: A Study of Nigeria and South Africa Oil and Gas Firms. *Research Journal of Management Practice*, 1(12).
- Rahman, M. R. C. A., Ahmed, R. M. i Hassan, M. S. (2017). Relationship between Unionized Companies, Government Ownership and Reporting Human Capital Information in Corporate Annual Reports. *Asian Journal of Accounting and Governance*, 8, 113–123. <https://doi.org/10.17576/AJAG-2017-08-10>
- Szczepankiewicz, E. I., Błażyńska, J., Zaleska, B., Ullah, F. i Loopesko, W. E. (2022). Compliance with Corporate Governance Principles by Energy Companies Compared with All Companies Listed on the Warsaw Stock Exchange. *Energies*, 15(17), 6481. <https://doi.org/10.3390/en15176481>
- Tsang, A., Wang, K. T., Wu, Y. i Lee, J. (2024). Nonfinancial Corporate Social Responsibility Reporting and Firm Value: International Evidence on the Role of Financial Analysts. *European Accounting Review*, 33(2), 399–434. <https://doi.org/10.1080/09638180.2022.2094435>
- Ustawa z dnia 29 września 1994 r. o rachunkowości. Dz.U. 2023 poz. 120 ze zm.
- Wasiuzzaman, S. i Subramaniam, V. (2023). Board Gender Diversity and Environmental, Social and Governance (ESG) Disclosure: Is It Different for Developed and Developing Nations? *Corporate Social Responsibility and Environmental Management*, 30(5), 2145–2165. <https://doi.org/10.1002/csr.2475>
- Yadav, P. i Prashar, A. (2023). Board Gender Diversity: Implications for Environment, Social, and Governance (ESG) Performance of Indian Firms. *International Journal of Productivity and Performance Management*, 72(9), 2654–2673. <https://doi.org/10.1108/IJPPM-12-2021-0689>
- Zarzycka, E. i Krasodomska, J. (2022). Non-financial Key Performance Indicators: What Determines the Differences in the Quality and Quantity of the Disclosures? *Journal of Applied Accounting Research*, 23(1), 139–162. <https://doi.org/10.1108/JAAR-02-2021-0036>
- Zyznarska-Dworczak, B. i Rudžionienė, K. (2022). Corporate COVID-19-related Risk Disclosure in the Electricity Sector: Evidence of Public Companies from Central and Eastern Europe. *Energies*, 15(16), 5810. <https://doi.org/10.3390/en15165810>

ISSN 1898-6447
e-ISSN 2545-3238

KRAKOW UNIVERSITY OF ECONOMICS
Rakowicka 27, 31-510 Kraków, Poland

The journal is available at krem.uek.krakow.pl