# THE ORGANISATIONAL CHANGE: MANAGING ENVIRONMENTAL, SOCIAL, AND ECONOMIC TRANSITIONS

Edited by
Marek Jabłoński, Angelika Wodecka-Hyjek

Krakow University of Economics Press

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Kraków 2025

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# Introduction

The issue of sustainable development, which encompasses environmental, social, and economic dimensions, currently constitutes one of the most significant challenges for contemporary science and management practice. Growing urban pressures, advancing processes of globalisation, as well as intensifying ecological and social crises require the search for new models of spatial governance, innovative organisational forms, and conscious consumption strategies. The studies presented in this publication engage with this discourse, highlighting the multifaceted nature of transformations that determine the functioning of cities, regions, and enterprises.

This monograph represents the result of an academic dialogue between scholars and practitioners affiliated with prominent research centres in Poland, offering an interdisciplinary perspective on processes shaping modern societies and economies. It emphasises the interconnections between environmental management, social innovations, and organisational strategies. In doing so, it contributes to a deeper reflection on the possibilities of implementing the idea of sustainable development on multiple scales – from local to regional to global. We would like to extend our sincere gratitude to the Authors of the chapters included herein for undertaking and discussing these important issues.

The authors' reflections have been divided into three parts, illustrating partial topics within the scope of the subject matter of the study:

I. Environmental Governance and Sustainable Territorial Development.

II. Sustainable Consumption, Agri-food Systems and Social Innovation.

III. Strategic Management, Organisational Development and Economic Transformation.

The first part of the monograph, titled *Environmental Governance and Sustainable Territorial Development*, focuses on issues related to the formation of environmental policies and spatial development. The chapters included address, among others: the analysis and characterisation of the evolution of anti-smog policy in Beijing; the challenges associated with the functioning of cities and

metropolitan areas in the context of sustainable development; the role of social movements in protecting access to natural resources; and a comparative study of socio-economic cooperation in metropolitan areas of the European Union and Ukraine.

The second part, titled *Sustainable Consumption, Agri-food Systems and Social Innovation*, highlights considerations related to responsible consumption and social innovations in food systems. The issues addressed include, *inter alia*: the role of the carbon footprint in shaping supply chains; challenges related to the consumer behaviour of young people; the design of packaging accessible to older adults and persons with disabilities; the significance and role of visual persuasion in digital media; and the development of the concept of socially responsible marketing.

The third part, titled *Strategic Management, Organisational Development and Economic Transformation*, concentrates on the analysis and discussion of the determinants of economic transformation and strategic management. The contributions in this section include: an analysis of resources and competencies in the field of housing logistics; the application of PESTEL and SWOT tools in the road transport sector; issues of succession and longevity in family businesses; the evolution of the knowledge-based economy; the role of entrepreneurship developed within the freelancing model; and the identification of conditions for the implementation of BIM technology in the management of construction investments.

As the scientific editors of this monograph, we wish to express our deep appreciation to all Authors, representing academic and administrative institutions such as: University of Foggia, Jagiellonian University, West Pomeranian University of Technology in Szczecin, City Unity College Nicosia, Jan Kochanowski University, Lviv Polytechnic National University, University of Agriculture in Krakow, Krakow University of Economics, State Biotechnological University, Kharkiv, Zhytomyr Polytechnic State University, University of Kragujevac, University of Granada, Lucian Blaga University of Sibiu, Universitas Islam Indonesia. We also extend our gratitude to the Reviewers, Professor Ivana Bestvina Bukvić, Professor Izabela Bednarska-Wnuk, and Professor Dominika Jakubowska, for their contributions to the creation and substantive shaping of this publication.

*Marek Jabłoński*, *Angelika Wodecka-Hyjek*

# PART I

# ENVIRONMENTAL GOVERNANCE AND SUSTAINABLE TERRITORIAL DEVELOPMENT

Chapter 1

# The Evolution and Effectiveness of Air Pollution Control Policies in Beijing (2015–2025)

Xiaomeng Fang, Giulio Mario Cappelletti, Carlo Russo, Miriam Spalatro

## 1.1. Introduction

Air pollution continues to pose a serious threat to global public health and is strongly associated with cardiovascular diseases, respiratory illnesses, cancer, and substantial economic burdens (Schraufnagel *et al.*, 2019; Liu *et al.*, 2023). Since 2010, when the World Health Organization began systematically monitoring air quality in major countries, China's urban areas have consistently reported high levels of pollution. In 2013, Beijing ranked among the world's most polluted cities, with PM2.5 concentrations exceeding international standards by 156% and an average of 186 smog days per year (World Health Organization, 2013; Beijing Municipal Ecology and Environment Bureau, 2024). Episodes of severe pollution have led to school closures, traffic disruptions, and widespread public outcry, compelling the government to adopt immediate and effective policy interventions (Yan *et al.*, 2025).

To address this challenge, Beijing introduced a series of air pollution prevention and control policies between 2013 and 2025, implemented in three phases: the Ten Measures for Air Pollution Prevention and Control (2013–2017), the Three-Year Action Plan for Winning the Battle for Blue Skies (2018–2020), and the 14th Five-Year Plan (2021–2025). These policies marked a significant shift in Beijing's strategy, moving from short-term campaign-style measures toward a sustained multi-pronged approach that combines government regulation, market mechanisms, and voluntary public participation.

This study aims to review and evaluate the effectiveness of Beijing's evolving policies in reducing air pollution and mitigating related socioeconomic impacts. Specifically, it addresses two key questions:

1) how policy measures at different stages have contributed to improvements in Beijing's air quality, and

2) what lessons Beijing's air governance experience can offer to other megacities facing similar environmental challenges.

## 1.2. Research Methodology

This study employs a combination of qualitative literature review and policy text analysis to systematically evaluate the evolution and implementation effectiveness of Beijing's air pollution control policies between 2015 and 2025. The specific research methods are outlined as follows:

*Systematic Literature Review and Content Analysis*

We extensively collected and analysed peer-reviewed papers from authoritative academic databases (e.g., Web of Science, CNKI), government work reports, environmental white papers, and assessment reports from international organisations (e.g., UNEP, WHO) from both domestic and international databases. We focused on empirical research, policy evaluations, and case studies related to Beijing's air pollution policies, extracting information on key policy instruments, implementation phases, pollutant data, and socioeconomic impacts.

*Analysis of Policy Texts and Official Documents*

This study systematically reviewed and coded key policy documents issued by the central government and the Beijing Municipal Government, including the Action Plan for Air Pollution Prevention and Control (2013), the Three--Year Action Plan for Winning the Blue Sky Defense War (2018), and the Beijing Ecological and Environmental Protection Plan for the 14th Five-Year Plan Period (2021). Following the Policy Instrument Classification Framework (Zhao *et al*., 2013), these instruments were categorised into three types: regulatory, market--based, and voluntary. Their evolutionary characteristics and combination strategies were then analysed.

*Data Integration and Trend Assessment*

By integrating air quality monitoring data (e.g., annual concentration changes of $PM_2$, $SO_2$, and $NO_2$) released by the Beijing Municipal Ecology and Environment Bureau with policy performance reports, we conducted a longitudinal assessment of pollution control effectiveness across different stages. In addition, we incorporated model-based analyses from academic research (e.g., Cheng *et al*., 2019) to enhance the robustness of our conclusions.

*Case Comparison and Lesson Extraction*

This study compares the Beijing case with policy interventions in other international metropolises (e.g., Delhi, India) to identify common challenges

and transferable lessons, thereby generating policy recommendations of broader international relevance.

Finally, this study adopts a policy analysis framework based on Zhao and co-authors' (2013) categorisation of policy instruments (regulatory, market--based, voluntary). Data were collected from peer-reviewed academic literature, official government reports, and environmental databases (e.g., Beijing Municipal Ecology and Environment Bureau, UNEP). The analysis focuses on policy outputs, air quality indicators, and socio-economic impacts between 2015 and 2025.

## 1.3. Theoretical Foundations

Regional governance policy instruments can be classified into three categories:

- regulatory policy tools,
- market-based policy tools,
- voluntary policy instruments.

Regulatory policy tools for regional air pollution control constitute the primary instruments of government intervention and primarily include:

- air quality and emission standards,
- bans and regulations,
- permits and emission allowances,
- target accountability systems,
- division of control areas,
- China's "Three Simultaneous Systems" (Article 26 of China's Environmental Protection Law, 1989: "Measures for pollution prevention and control in construction projects shall be designed, constructed, and put into operation simultaneously with the main project").

Second, market-based policy instruments for regional air pollution control can be classified into two subcategories:

- market use,
- market creation.

The "market use" subcategory mainly includes instruments such as pollutant emission fees, environmental taxes, subsidies, deposit-return schemes, and environmental liability insurance. The "market creation" subcategory, based on the principles of the Coase Theorem, includes primarily instruments such as tradable pollutant emission allowances and regional ecological compensation.

Finally, voluntary policy instruments for regional air pollution control enable non-governmental entities to engage in regional environmental govern-

ance and include tools such as information dissemination, voluntary agreements, public participation, and environmental education (Zhao & Yuan, 2019).

Building on the governance policy instruments outlined above, this study reports, interprets, and analyses Beijing's governance policies implemented over the past decade.

## 1.4. Policy Evolution Path

Before 2013, Beijing relied primarily on a "local management" approach, employing administrative orders – such as restrictions on motor vehicles and industrial production – as key policy tools. The most notable measures included temporary controls implemented during the 2008 Olympics. Although this type of campaign-style mobilisation (CSM) proved effective in the short term, it lacks a sustainable mechanism to address the issue, resulting in a subsequent rebound in pollution levels.

### 1.4.1. Transformation Phase (2013–2017)

2013 marked a pivotal year in the formulation of air pollution policies in Beijing. Pollution control became a central objective aimed at improving citizens' living conditions; consequently, the State Council issued the Action Plan for the Prevention and Control of Air Pollution (hereafter referred to as the "Action Plan").

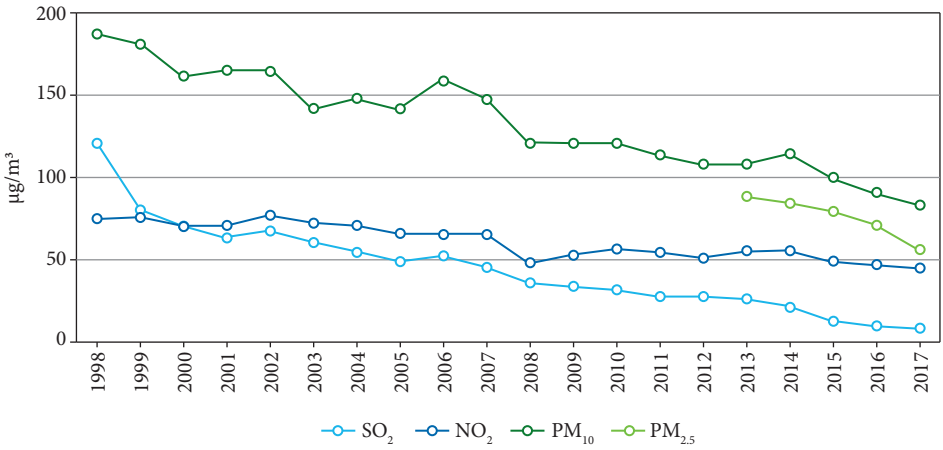


Figure 1.1. Annual Average Concentration Trends of Major Air Pollutants in Beijing, 1998–2017 (μg/m³)

Source: (Beijing Municipal Ecology and Environment Bureau, 2024).

The plan provided a systematic framework for national air pollution control by establishing a regional cooperation mechanism. It aimed to achieve general improvements in air quality in the country within five years of implementation (Fan, Zhao, and Yang, 2020), particularly in the Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta regions. The Action Plan committed to gradually reducing the number of days heavily polluted and significantly improving air quality nationwide, based on specific indicators such as the concentration of inhalable particulate matter in cities at the prefecture level and above, and the number of days with good air quality.

The 2017 targets for fine particulate matter ($PM_{2.5}$) concentrations in the Beijing-Tianjin-Hebei, Yangtze River Delta, and Pearl River Delta regions were to decrease by approximately 25%, 20%, and 15% (Figure 1.1), respectively, with the annual average $PM_{2.5}$ concentration in Beijing reduced to 58 micrograms per cubic meter (China's State Council, 2013).

### 1.4.2. Deepening Phase (2018–2020): One Microgram Action, Technology--Driven and Normalised Governance

In 2018, the State Council issued the Three-Year Action Plan to Win the Battle to Protect Blue Skies, which established national targets of 80% of days with good air quality and an 18% reduction in $PM_{2.5}$ concentrations in prefecture-level and above cities by 2020 relative to 2015 (Figure 1.2). The plan prioritised key regions, critical time periods, and priority sectors, emphasising the prevention and control of pollution sources, process supervision, end-of-pipe treatment, and the continuous improvement of ambient air quality (Wang, 2021).

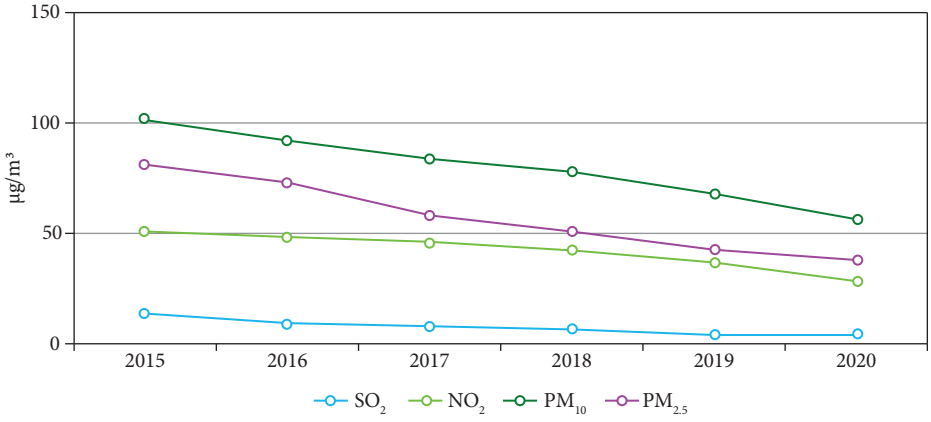


Figure 1.2. Annual Concentration Trends of Criteria Air Pollutants in Beijing, 2015–2020 (μg/m³)
Source: (Beijing Municipal Ecology and Environment Bureau, 2024).

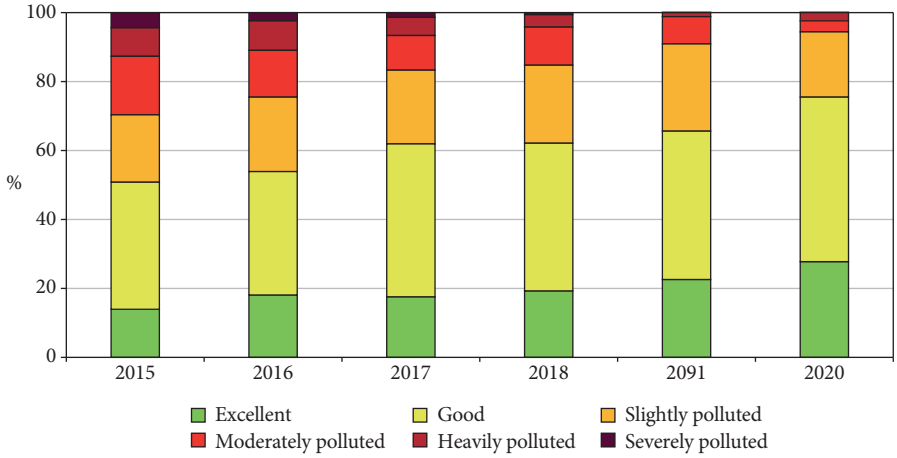


Figure 1.3. Annual Proportion of Air Quality Levels in Beijing, 2015–2020
Source: (Beijing Municipal Ecology and Environment Bureau, 2024).

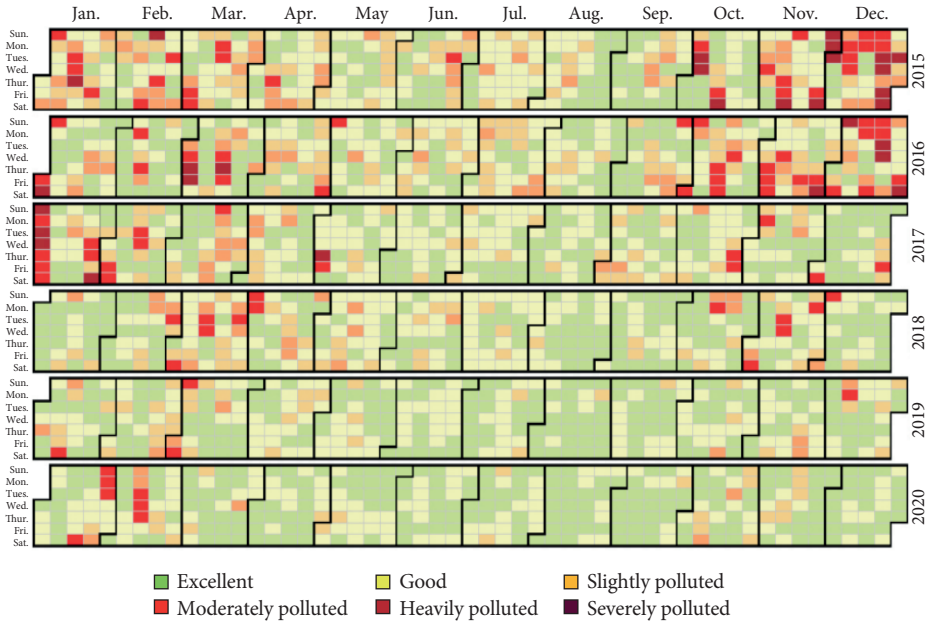


Figure 1.4. Calendar of Ambient $PM_{2.5}$ Levels in Beijing, 2015–2020
Source: (Beijing Municipal Ecology and Environment Bureau, 2024).

The Beijing Municipal Government launched the "One Microgram" campaign, targeting critical areas and key links, and implementing refined governance measures. The strategies adopted included:

- innovating scientific and technological approaches,
- establishing an advanced air pollution management platform,
- employing satellite remote sensing,
- utilising big data analytics and other technologies to accurately identify pollution sources and enhance governance efficiency.

Beijing further reinforced coordinated control of multiple pollutants and improved public participation through "eco-driving" training programmes and intelligent transportation systems (Municipal Ecological Environment Bureau Office, 2024; Jin *et al*., 2023). The policy focus shifted toward refined management and technological innovation, including the promotion of new electric vehicles (with the number of vehicles on the road reaching 400,000 by 2020), the implementation of "National VI" emission standards, and the establishment of the Transportation Energy and Environment Monitoring Center (TOCC) (Sun *et al*., 2021). The implementation of these policies yielded significant results. Between 2015 and 2020, concentrations of $SO_2$, $NO_2$, $PM_{10}$, and $PM_{2.5}$ decreased markedly (Pei & Yan, 2018). The number of days with high-pollution dropped dramatically (Figure 1.3), and in the final two years of the 2015–2020 period, they were concentrated only in a few days during January and February (Figure 1.4). The successes of the "One Microgram Action" laid the foundation for the next phase of precision governance under the 14th Five-Year Plan.

### 1.4.3. Precision Phase (2021–2025): 14th Five-Year Plan

The 14th Five-Year Plan sets a target that, by 2025, the proportion of days with good air quality in cities at the prefecture-level and above throughout the country will reach 87.5%, high-pollution days will be substantially eliminated, and $PM_{2.5}$ concentrations will continue to decline. The plan adopts a comprehensive approach, promoting the synergistic reduction of both air pollutants and carbon dioxide emissions, coordinated with air pollution prevention and control efforts. These measures aim to mitigate climate change impacts and foster the overall green transformation of economic and social development (The People's Government of Beijing Municipality, 2024).

In line with central government policy, the Beijing Municipal Government formulated the 14th Five-Year Plan for Ecological and Environmental Protection, tailored to local conditions. It sets a target of maintaining the annual average $PM_{2.5}$ concentration at approximately 35 $\mu g/m^3$ by 2025, while substantially reducing high-pollution days. Efforts include restructuring and upgrading the

energy mix, accelerating the development of high-tech industries to expand the use of renewable energy, intensifying the control of motor vehicle emissions, and continuing to promote electric vehicles. The supervision of sources of industrial pollution will be strengthened, along with measures to reduce the emissions of volatile organic compounds (VOCs).

Monitoring and rapid-response mechanisms will be implemented through digital platforms in collaboration with high-tech companies. Regional collaborative governance will be integrated with market-based and voluntary policy instruments to enhance the effectiveness of regulatory control (Beijing Municipal Ecology and Environment Bureau, 2024).

## 1.5. Significant Improvement in Air Quality

In 2015, the United Nations Environment Programme (UNEP) and the Beijing Municipal Environmental Protection Bureau jointly published the report Beijing's Air Pollution Control Process: 1998–2013, which evaluated Beijing's smog control efforts over this period. UNEP focused on two main areas: coal burning and motor vehicle pollution control. The results indicated that measures targeting coal combustion and vehicle emissions played a significant role in improving air quality in the city.

Over the past 15 years, Beijing has implemented a range of effective measures to reduce air pollution, including promoting low-sulfur coal, upgrading boilers (replacing coal with gas), increasing natural gas consumption in the power sector, issuing urban vehicle management regulations (such as traffic restrictions in the city center), installing air quality monitoring stations, and publishing real-time monitoring data (UN Environment, 2019).

Analysis of pollution data shows that the annual average concentration of $PM_{2.5}$ in Beijing has steadily decreased, gradually reaching Level 2 of the national air quality standard. The annual average concentrations of $PM_{10}$, $NO_2$, and $SO_2$ were 54, 24, and 3 $\mu g/m^3$, respectively, all consistently meeting Level 2 standards. Considering year-on-year variations, major pollutant levels in Beijing improved further in 2024 compared to the previous year, with $PM_{2.5}$ decreasing by 6.2%, $PM_{10}$ by 11.5%, $NO_2$ by 7.7%, while $SO_2$ remained at an extremely low level in the single digits (Beijing Municipal Ecology and Environment Bureau, 2024).

## 1.6. Economic and Social Benefits

Contrary to the widely held view that "air pollution control negatively impacts the economy," recent years have shown that key areas of air pollution

management, particularly the Beijing-Tianjin-Hebei region, have experienced improvements in environmental quality, while the economies of sectors previously affected by pollution have continued to grow. Furthermore, industries related to environmental protection in regions that play an important role in control efforts now rank among national leaders (Jiang *et al*., 2020).

In the first half of the year, Beijing's production of new electric vehicles exceeded 100,000 units for the first time (Beijing Municipal Ecology and Environment Bureau, 2024). Public health risks have also declined (Zheng *et al*., 2022), with reductions in $PM_{2.5}$ concentrations estimated to lower the incidence of respiratory diseases by 15% (Wang, 2019).

## 1.7. Challenges and Shortcomings

In recent years, contrary to trends in other environmental indicators, ozone pollution in Beijing has been increasing (Silver *et al*., 2018). The causes of this phenomenon are complex, and its impacts on human health and the natural environment are significant, making it difficult to control. Moreover, achieving carbon neutrality remains a challenging issue that China and the international community must jointly address to mitigate air pollution. Although air quality in Beijing has improved, these improvements are not yet stable, and regional emissions of air pollutants remain high, far exceeding the environment's carrying capacity.

Air quality is also strongly influenced by meteorological conditions. Under adverse weather, such as temperature inversions and poor wind and atmospheric circulation in autumn and winter, pollutants tend to accumulate and transform, leading to regionally widespread pollution events (Beijing Municipal Ecology and Environment Bureau, 2024; Pei & Yan, 2018; Li *et al*., 2018). Pollutants can migrate between cities or regions; therefore, air pollution control requires coordinated prevention and mitigation strategies at the regional level. Differences in regional standards – for example, the pollution discharge tax in Hebei being eight times lower than in Beijing – have contributed to the persistent issue of "pollution transfer" (Zhao & Yuan, 2019).

## 1.8. Implications for Developing Countries

Developing countries should establish a three-tier "country-region-city" governance system and strengthen mechanisms for comprehensive regional administrative cooperation. For instance, the Beijing-Tianjin-Hebei "cooperation group" model – which includes a regional environmental fund and a joint

enforcement agency – can serve as a reference. Policy recommendations include avoiding over-reliance on administrative regulation, introducing economic incentives (e.g., differential fuel taxes), and promoting social participation (e.g., oversight by environmental NGOs). In Delhi, India, a combined policy of "odd- and even-day traffic restrictions plus bus subsidies" has reduced peak $PM_{2.5}$ levels by 20% (Chowdhury *et al.*, 2017).

Additional recommendations emphasise the adoption of low-cost monitoring technologies, such as satellite remote sensing and sensor networks and prioritising the electrification of public transport. African countries, for example, could leverage networks of solar-powered charging stations. Policy-making must also consider the rights and interests of low-income populations; for instance, governments can implement "old-for-new" subsidies to phase out highly polluting vehicles (Zaman & Zaccour, 2020).

## 1.9. Conclusions

The evolution of Beijing's air pollution policies clearly illustrates China's strategic shift from administratively-led management to diversified, coordinated, and refined environmental governance. Prior to 2013, policies relied predominantly on short-term administrative orders, such as production restrictions during the Olympic Games, and lacked mechanisms for long-term sustainability. The 2013 introduction of the "Ten Measures for Air Pollution Control" marked the establishment of a regional collaborative governance framework. By implementing a target-based responsibility system and fostering regional collaboration – particularly through joint prevention and control efforts in the Beijing-Tianjin--Hebei region – this framework overcame the limitations of the prior "local management" approach (Wang, 2021). The 2018 "Blue Sky Defense Campaign" and the "One Microgram" campaign further advanced technology-driven and precise governance, employing big data, satellite remote sensing, and other tools to accurately identify pollution sources, exemplifying the intelligent and refined nature of contemporary management strategies.

This transition has facilitated a green transformation in both corporate behaviour and economic structure. Strict emission standards have forced companies to retire outdated production capacity and adopt cleaner production methods, such as converting from coal to electricity or gas, while simultaneously fostering the growth of green industries, including new energy vehicles and environmental protection technologies (Jiang *et al.*, 2020). The Beijing-Tianjin-Hebei region has mitigated "pollution transfer" and promoted coordinated regional economic and environmental development through market instruments such

as environmental taxes and ecological compensation. The Beijing case demonstrates that effective environmental governance requires an integrated application of regulatory, market-based, and social policy tools, and promotes economic restructuring through multi-level collaboration, providing a valuable reference for the sustainable governance of major cities worldwide.

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Chapter 2

# Problems of Sustainable Development in the Context of Functioning of Cities and Metropolises: The Example of Poland

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## 2.1. Introduction

The issue of sustainable development is firmly embedded in contemporary debates on the future of the world. A key element of this debate is the development of cities and metropolises, which globally are growing faster than the world's population (GUS, 2015, p. 44). Current trends show a shift away from the concentric city model toward one that reflects a polycentric structure (GUS, 2022). Ensuring the sustainable and balanced development of cities and metropolises requires adopting the broadest possible perspective, taking into account the basic capital components of such development: (a) social capital, including its institutional dimension; (b) environmental and spatial capital; and (c) economic capital.

The essence of sustainable and balanced urban and metropolitan development lies in the long-term influence of each of these capitals without the dominance of any one over the others. In this context, the emerging problems of socio-spatial and economic differentiation represent a dilemma for urban and metropolitan development, posing significant challenges such as the emergence of enclaves of deprivation, the smooth implementation of privatisation processes, subsidised housing, urban policies, or national policies toward cities. Endogenous and exogenous factors determine the realisation of this development.

Urban development is closely related to the urbanisation process, understood as a cultural and civilisational phenomenon involving the concentration of population and non-agricultural livelihoods in urban centres, along with the adoption of new standards and customs ("urban"). The world's urban population has increased steadily. According to Statistics Poland, 49.2% of the world's popu-

lation lived in cities in 2005, and by 2020 the share had risen to 56.2% (74.9% in Europe). Projections indicate that by 2050, 68.4% of the global population will live in urban areas (GUS, 2022, pp. 97, 113). In Poland, the urban population accounted for 24.6% in 1921, 61.8% in 2002, and 59.8% in 2021. The slight decrease is due to the migration of urban residents to rural areas and higher birth rates in the countryside (GUS, 2022, pp. 105, 108). This trend is expected to continue, with the share of the urban population in Poland projected to fall to 57% in 2040 and 55.5% in 2050. Equally significant is the projected 11% decline in Poland's total population between 2021 and 2050, from 38.04 million to 33.95 million (GUS, 2022, p. 113).

The purpose of this paper is to highlight the importance of sustainable development for contemporary cities and metropolises and to evaluate progress in this area using examples from selected Polish cities and metropolises. The choice of this issue stems from the crucial role of highly urbanised areas in implementing sustainable development policies not only at the national level but also within the EU and globally.

## 2.2. Methodological Assumptions

The realisation of this research project, entitled "Problems of sustainable development in the context of functioning of cities and metropolises: the example of Poland," is connected with the need to situate the issue within the broader context of scientific studies concerning sustainable development. This subject is significant on a local, regional, and global scale. It not only constitutes a theoretical and cognitive framework in light of science but also – above all – a practical one, fitting into the 2030 Agenda of the United Nations' as a strategy for the development of the contemporary world.

The 2030 Agenda contains 17 sustainable development goals, accompanied by the identification of five key areas: people, planet, prosperity, peace, and partnership. Goal 11 was formulated as follows: "Make cities and human settlements inclusive, safe, resilient, and sustainable." According to UN data as of 2025, Goal 11 at the global level has been assessed as facing "major challenges," while the dominant trend has been described as "stagnating" (Sachs *et al*., 2025, p. 11). However, in the case of Poland, the results achieved in the context of the global economy are much more positive. They have been classified as "challenges remain," with the dominant trend being "moderately increasing" (Sachs *et al*., 2025, p. 22). This corresponds to the second level on a four-point achievement and trend scale (it should be emphasised that none of the OECD countries simultaneously reached the highest value for both achievement and trend). The results

obtained for Poland thus provide a premise for conducting research on the main problems of sustainable development in the context of the functioning of cities and metropolises within the national economy.

Taking into account the data and information presented above, the authors of this study recognised that sustainable development of cities is a significant issue, especially considering the problems and challenges associated with it from a scientific and research perspective. Moreover, bearing in mind that economics and management sciences (within which this research is situated) belong to empirical sciences whose primary task is to assist in solving problems – while considering the four main functions of science, namely: diagnostic, explanatory, prognostic, and practical (Klepacki, 2009, p. 41) – the justification for undertaking research in this field emerges all the more strongly, together with the need to present appropriate conclusions and formulate recommendations.

Based on a preliminary review of the literature, certain revealed trends have been identified that indicate a departure from the concentric (monocentric) model of urban functioning in favour of a polycentric structure. This structure is characterised by the presence of multiple equivalent centres forming an integrated network, which – by assumption – should contribute to the so-called synergy effects.

Initial literature studies have revealed that analyses concerning the polycentricity of cities in Poland are limited, particularly in terms of generally accepted and applied definitions, as well as methods of measuring the phenomenon of polycentricity in cities and metropolises (Meijers, 2008). There are studies that address:

- a functional approach to understanding contemporary cities and metropolises, by demonstrating the links and relationships of functional connections between individual centres (Kurek, Wójtowicz & Gałka, 2020; Śleszyński, 2013),
- factors in the evolution of urban polycentricity (Sadowy, 2020),
- a new perspective on describing and classifying urban structures, distinguishing their types, depicting the dynamics of change and their differentiation, or identifying the causes of processes such as suburbanisation, deurbanisation, and counterurbanisation (Kloosterman & Lambregts, 2001),
- measurements of polycentricity in urban regions in Poland (Bartosiewicz & Marcińczak, 2020).

There is still a lack of research on the problems of sustainable development in the context of the functioning of cities and metropolises – the example of Poland. This can be identified as a clear research gap.

Based on the identified research gap, the authors of the study pointed to the existence of a research problem, which was formulated in the form of the following question: "If so, what are the main problems observed in the area of sustainable development in the functioning of cities and metropolises in Poland?"

The main purpose of this research is to highlight the importance of sustainable development for contemporary cities and metropolises, along with an attempt to characterise the progress made in implementing this process, using selected cities and metropolises in Poland as examples. In this respect, the following specific objectives were formulated:

C1: to present an overview of smart and sustainable cities, including an explanation of key concepts, their contexts, and references,

C2: to present the concept of the metropolis and the metropolitan area,

C3: to outline the pathways characterising the transition of Polish metropolises toward sustainable development and the outcomes achieved in this regard,

C4: to present conclusions and recommendations.

The scope of the research topics covers the issue of sustainable development of cities and metropolises in the context of the main problems related to their functioning within the spatial framework of the national economy.

The scope of the research objective concerns selected cities and metropolises in Poland. Their selection was purposeful, with the aim of demonstrating different – sometimes divergent – pathways of development that lead to the balancing of observed changes in the context of human, natural and economic capital.

The time scope of the research refers to a long period, beginning with the years of systemic transformation in Poland, that is, the introduction of a market economy (the 1990s) and extending up to 2025 inclusively.

The spatial scope of the research is limited to the Polish economy – cities and metropolises – although, within the critical analysis of the literature, research results in a global perspective were also taken into account, serving as a background for explaining the analysed changes.

The study used a qualitative research method, based on analysis and critique of the literature. Genetic explanation was adopted, referring to processes and phenomena extended over time, as well as teleological-functional explanation, based on the search for the purpose toward which a given process is directed (Apanowicz, 2000, pp. 35–38). Within the framework of scientific inquiry, the processes of analysis, comparison, and inference were used. In the context of the formulated research problem, the following research questions were posed:

RQ1: How are smart and sustainable cities defined, and what links exist between them?

RQ2: What is the essence of the concept of the metropolis and metropolitan area?

RQ3: What conclusions arise from the analysis of sustainable development pathways of Polish cities and metropolises, and what recommendations follow?

The research procedure adopted in the study assumes four stages of conducting scientific research, as illustrated in Figure 2.1.

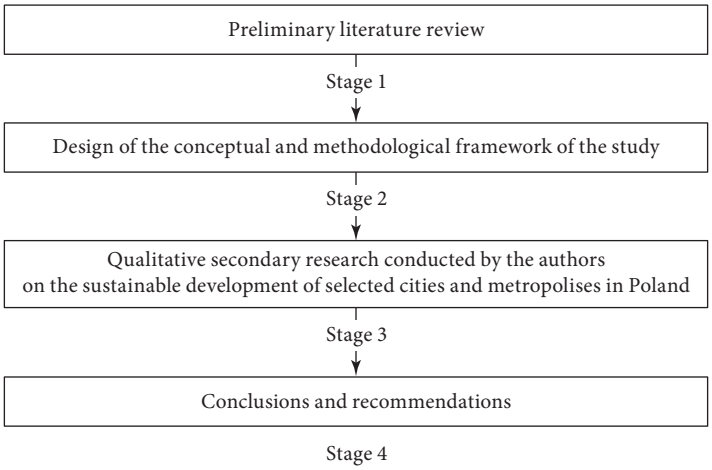


Figure 2.1. Research Procedure for the Study "Problems of Sustainable Development in the Context of Functioning of Cities and Metropolises: The Example of Poland"

Source: authors' own elaboration.

The research limitations concern the following:

- the collected resources and analytical materials concerning scientific publications on which the study was based (library resources of the Krakow University of Economics, online databases, specialist sources such as Scopus and Web of Science, limited exclusively to publications in Polish and English),
- the time scope of the study, restricted to the period from the 1990s to 2025,
- the use of qualitative research methods only,
- the spatial limitation of the secondary research to the Polish economy.

However, it should be emphasised that, despite the indicated research limitations, the scientific work undertaken should result in the development of added value:

- in the theoretical and cognitive dimension, concerning the systematisation of concepts and definitions, as well as the presentation of the essence of emerging problems of sustainable development in the context of the functioning of cities and metropolises, using Poland as an example,

- in the conceptual and methodological dimension, regarding the formulation of conceptual assumptions of the research, the indication of the subject, object, temporal, and spatial scope of the study, the identification of the research method, and the justification for the selection of research subjects,
- in the empirical dimension, through the identification of pathways of sustainable development in relation to Polish cities and metropolises,
- in the utilitarian dimension, through the presentation of relevant conclusions and recommendations.

## 2.3. Smart and Sustainable Cities – an Overview of Problems

In the twentieth century, large cities, as centres of economic life, performed this role primarily due to the location of industrial plants. In the 21st century, however, they are clearly losing their industrial character and becoming centres of service activities, particularly the provision of business services. In this way, the largest of these cities – especially those concentrating companies and institutions with intensive international links – are transforming into so-called world cities or international cities. World cities are also distinguished by a high level of information revolution and digitalisation. Some are referred to as global cities, i.e., those with a strategic role in the world economy, such as London, New York, and Tokyo. Global cities form a worldwide network of centres of economic power (Smętkowski *et al*., 2012, pp. 11–14).

Creative cities, on the other hand, are characterised by the creative potential of their inhabitants, particularly scientists, engineers, architects, doctors, financiers, and artists, especially when these professions account for more than one-third of total employment. It is worth adding that cultural diversity, openness to novelty and even weak social ties among workers (the latter is surprising) increase the strength of the creative class (Kozielska, 2008, pp. 155–168).

Certain types of cities associated with sustainable development are the so-called Smart Cities, also referred to as knowledge cities, digital cities, or simply sustainable cities (and sometimes even as "elegant" cities). The concept of smart cities originated in the USA in the 1990s, understood as resident-friendly cities with an improved quality of life. The features of these cities include the availability and high level of information and communication technologies, the participation and bottom-up initiatives of the residents in management, and the sharing economy. The literature points to three stages in their development. This concept is also intended to prevent overdevelopment or urban sprawl, i.e., exurbanisation. Some researchers in this field suggest that this new concept of the city should eliminate the negative aspects of large cities and move toward the "ideal city" (Augustyn, 2020, pp. 78–90).

The concept and essence of sustainable development, understood as socio-economic development aimed at preventing the effects of limited natural resources and environmental pollution, were popularised in the 1990s by the UN World Commission on Environment and Development (first introduced as the concept of eco-development). Initially, it concerned primarily the economic policy of states, but quite quickly, supported by environmental regulations, it was also adopted by environmentally burdensome enterprises, which began to implement their own environmental protection programmes. Over time, cities themselves became subjects of environmental policy, with an emphasis on spatial issues. At first, urban programmes and publications on this subject referred to sustainable development as "zrównoważony rozwój", which was the result of a mistranslation of the Anglo-Saxon term, as "sustainable" or "sustained" does not mean "zrównoważony" in Polish, but rather "samopodtrzymujący" się or "trwały".

In the literature on the functioning and development of cities, sustainable development is generally understood as a balance between economic, social, and ecological goals and the preservation of environmental resources for future generations. This understanding is correct, despite the aforementioned terminological ambiguities. A sustainable city should have the capacity to function as a space for communication and social interaction, as well as for cultural development, and above all, it should be a place where people want to live and with which they identify. Although there is no universally accepted definition of the term "sustainable city," both the literature and the government documents emphasise that the main objective of urban development is to improve well-being, understood as higher income and better quality of life for residents. Sub-objectives include increasing access to health services and education, fighting poverty, ensuring social justice, promoting cultural diversity, and preserving biodiversity. These goals are also reflected in EU documents, including the following postulates (Augustyn, 2020, pp. 37–42; Słodczyk, 2020):

- Urban Charter, which addresses the rights of urban communities to safety, employment, a healthy environment, and access to leisure areas,
- Charter of European Cities and Towns Towards Sustainability (Aalborg Charter),
- European Spatial Development Perspective (ESDP), among others.

## 2.4. The Concept of Metropolis and Metropolitan Area

As recently as 2015, out of the 17 urban functional areas in Poland, 8 had the form of inter-communal agreements and 9 had the form of associations with their own governing bodies (Kociuba, 2017, p. 174), but none operated as

multi-purpose municipal associations, i.e., metropolises. However, studies on urban economy quickly turned their attention to the development of large cities (Jaworska-Dębska, 1992; Kulesza, 1995). This is because a large city, exerting a creative impact on the surrounding region and playing a significant role at the national level, generates an urbanised area around itself that transforms into an urban complex, i.e., an agglomeration (not a conurbation, which is a complex of cities and industrial districts without a main centre and with combined spatial development). An urban agglomeration is a morphological unit in the form of a compact ensemble of interconnected settlement units, i.e., a large city with its surrounding area. Although the aforementioned terms are unfortunately defined differently in the literature and in project documents, it can be clearly argued that a large city thereby becomes a metropolis, i.e., a major city in economic and cultural terms on a regional (or ecclesiastical province) as well as national scale.

The professional literature usually provides more extensive definitions, such as: "A metropolis is a spatially coherent area of influence of a city, which is the seat of a voivodeship or regional assembly and is characterised by strong functional links with its surroundings, significant economic and innovative potential, a developed specialised services sector, central functions of at least national scope, and the role of a node in the system of transport, communication, organisational and information relations, as well as high accessibility on various spatial scales (including international)." Among other definitions, the following can be cited: "A metropolis is a large urban centre with a population of approximately 1 million inhabitants, characterised by excellence in all core activities and place specificity" (Jałowiecki, 2000, p. 9; Jałowiecki, 2010; Markowski & Marszał, 2006, p. 19).

In order to be regarded as a metropolis, a large city should, according to the majority of authors already quoted, meet several of the following criteria:

- a population of at least 0.5–1 million,
- significant economic potential and a strongly developed specialised services sector,
- high innovation potential in the form of scientific and R&D centres,
- functions of a metropolitan nature, i.e., functions of at least national scope,
- the role of a node in the system of communication links and highly accessible information networks on a national and international scale,
- the ability to stimulate the development of a networked model of economy and management.

A characteristic feature of metropolises is, therefore, the concentration of highly specialised business and business-related services, including those provided to foreign clients, and the organisation of international congresses and

other events. This process, referred to as metropolisation (i.e., the final phase of urbanisation), involves some large or major cities assuming leadership functions in managing a highly developed economy on a transnational and political scale, as well as influencing the culture of the region (Jałowiecki, 2004, p. 53). The impact on management is exerted not so much by the metropolis itself but by the metropolitan association, understood as an association of communes and poviats located at least partly within the area of this association and possessing legal personality and the right to perform public tasks. Although legal personality is the most relevant here, due to insufficiently specified legal provisions in Poland, this issue raises some controversy (Sześciło, 2018, p. 16; Pszczyński, 2021, p. 42).

Metropolitan areas are functional urban areas with a population of at least 500,000 residents (which are indicated similarly in the recommendations of the Organisation for Economic Cooperation and Development). According to OECD data, there are 275 metropolitan areas in the world (Kaczmarek, 2018, p. 272), including 101 in Europe and 68 in the USA. Statistics Poland, guided by EU NTS standards, distinguished 12 metropolitan areas in Poland. They can also be classified as Metropolitan European Growth Areas (MEGAs). Thus, a metropolitan area is usually identified with a metropolis, but it is equally often assumed that a metropolitan area constitutes its sphere of influence (Czapiewska, 2019, p. 95). Harmonisation of development between the central city of a metropolis and its functional area generates benefits from cooperation and other multiplier effects. It is also worth noting that metropolitan areas are, to some extent, reminiscent of industrial complexes, which were an important element of economic development programmes in the 1960s (Isard, 1965, p. 231; Gajda & Górka, 1968, pp. 3–26), as well as later clusters (although in this case only the links between enterprises are relevant, not necessarily the specific territory).

## 2.5. Polish Metropolises on the Path to Sustainable Development

The initiators of the introduction of the term "metropolis" – combined with certain powers – were the mayors of Gdańsk, Katowice, Kraków, Poznań and Warsaw, who established the Union of Polish Metropolises in 2008. At that time, associations of communes and poviats were already operating in several voivodeships, and there were proposals for a law regulating the status of metropolitan areas. The term "metropolis" in legal terms in Poland did not appear until 2015 in the Act on Metropolitan Associations, but unfortunately without implementing regulations (Journal of Laws, 2015, item 1890). It provided for metropolitan areas with at least 500,000 residents to be granted certain tasks of local governments.

It was repealed in 2017 by the Act on the Metropolitan Association in the Silesian Voivodeship (Journal of Laws, 2017, items 730, 2020 and 1378), which established the Upper Silesian and Zagłębie Metropolis. Officially, it is the first and so far the only metropolis in Poland. However, according to the criteria adopted in Poland in 2011 in the 2030 National Spatial Development Concept, the following are also recognised as metropolitan centres: Warsaw (the capital metropolis), Kraków, Łódź, Poznań, Szczecin, the Tricity and Wrocław. Other classifications also take into account Białystok, Bielsko-Biała, Częstochowa (as the spiritual capital of Poland), Kielce, Olsztyn and Rzeszów, dividing them into regional centres of class A and class B.

The evaluation of the development of metropolitan cities in Central and Eastern Europe is an interesting, though debatable, issue. Cities of this type initially developed thanks to their own innovation and creativity, based on the demographic and economic potential of the regional environment, characterised by low-skilled workers producing simple and minimally processed products. Therefore, the ties between the metropolis and its hinterland were initially weak and of little significance (apart from the supply of raw materials). It is only when a metropolitan city becomes a truly strong agglomeration centre that this leads to the creation and growth of a real metropolitan area, the development of strong metropolitan links with the entire hinterland, and more intensive relations with other metropolises.

As part of cohesion policy, the European Union introduced the Integrated Territorial Investment instrument to integrate management in metropolitan areas. This is intended to go beyond treating these areas only within administrative boundaries. This remains a difficult issue, as many communes are reluctant to join a metropolitan area and potentially transfer some of their powers. However, in Upper Silesia, as many as 94% of territorial units – without much hesitation – accepted the metropolitan association project.

The Upper Silesian and Zagłębie Metropolis, the only one to date, was established in 2018. It comprises 13 cities with native rights and 28 communes, has a population of 2.3 million residents (i.e., 893 persons/km$^2$, compared with 370 for the voivodeship and 123 for Poland), and occupies 20% of the area of the Silesian Voivodeship. Approximately 240,000 businesses operate in this area. The metropolis accounts for around 8% of national GDP (Najwyższa Izba Kontroli, 2021). It is a multi-purpose public entity with elements of self-governance, performing its own tasks similarly to local government units. Its tasks – according to previous findings – include shaping spatial order, promoting the socio-economic development of the Association's area, managing public transport, cooperating on the planning of national and voivodeship roads, and

promoting the Metropolitan Association. In general, evaluations of the Association's activities to date have been positive. Criticism has focused mainly on investment activities, as Katowice and Gliwice are now investing relatively more than before – at the expense of other communes. In addition, the lack of effectiveness in enforcing penalty fees for using public transport without a valid ticket has been identified as a shortcoming (Najwyższa Izba Kontroli, 2021; Słobodzian, 2022, pp. 131–144).

Kraków, with its immediate surroundings, has metropolitan potential based on its historical heritage, its strong branding, its high recognition, and its tourist attractions. In 2000, Kraków became the European City of Culture and, in 2013, a UNESCO Creative City. It is also a business services centre that employs 65,000 people. One of the first concepts for the development of Kraków as a metropolis (although, of course, long-term plans had been made earlier) can be found in the resolution of the Kraków City Council of 13 April 2005, which adopted three strategic objectives:

1. Kraków as a family-friendly city, an attractive place to live and stay.
2. Kraków as a city of competitive and modern economy.
3. Kraków as a European metropolis with key scientific, cultural, and sporting functions.

Similarly, the Lesser Poland Voivodeship Assembly assumed comparable strategic goals in its development strategy adopted on 30 January 2006:

1. To strengthen the economic competitiveness of the region.
2. To create conditions for comprehensive social development and a high quality of life.
3. Strengthen the institutional potential of the voivodeship.

These strategic objectives were further developed into detailed operational objectives. The main emphasis was placed on investing in infrastructure, particularly in the development of transport (road and rail) and ICT infrastructure, which strengthens the interaction between the metropolis and the region and integrates the Kraków Metropolitan Area.

The development of Kraków and its hinterland has been the subject of studies, among others, at the Department of Economic and Social History of the Kraków University of Economics (since 2015). A debate was also held at the Historical Museum of Kraków on 10 January 2018, in which certain weaknesses in the city's functioning were highlighted, including a provincialisation process resulting from the centralisation of power in Warsaw at Kraków's expense in areas such as broadcasting, banking and the location of other central offices (Purchla, 2017, 2018). In addition, Kraków opposed certain statutory solutions regarding cooperation with cities and communes within the planned metropol-

itan association, which these entities critically evaluated. Furthermore, cooperation with Katowice remains limited, despite the fact that it takes only an hour to travel between the two cities. This is why the idea of creating a joint metropolis (the so-called Krakowice) has not yet been realised.

The Gdańsk–Gdynia–Sopot Metropolitan Area is an association of self-governing communes and municipalities established in 2011 to develop technical infrastructure and cohesion, as well as to jointly plan and manage this area. It comprises 57 local government units on 5,500 km², inhabited by 1.5 million people – 67% of the population of the Pomeranian Voivodeship. This area possesses many advantages conducive to the development of future metropolitan functions (Czapiewska, 2019, pp. 97–108).

So far, there has been virtually no official project for a comprehensive reform of local government with regard to metropolitan areas. Although metropolises are the subject of public debate, they have become more of a political than a pragmatic issue, as the authorities have avoided introducing new statutory solutions, particularly the creation of a new type of local government adapted to the specific conditions of existing and future metropolitan areas. A draft law on metropolitan local government has been prepared at the University of Gdańsk, which would regulate, among other things: the legal definition of a metropolis and metropolitan area, the number and size of metropolitan areas, the scope of action and tasks of metropolitan local government, its authority and competences, the participation of residents in decision-making, financing mechanisms and the supervision of its activities (Szlachetko, 2020). Under this proposal, the metropolis would become a unit of local government. The draft law envisages the establishment of 13 metropolises, including Gdańsk and Gdynia as well as Bydgoszcz and Toruń separately (although other authors generally group these pairs of cities into single metropolises).

It can be expected that the first positive experiences of Katowice and Kraków, together with the aspirations of other large urban centres to become metropolises, will lead to the emergence and implementation of further metropolitan concepts in Poland as well.

## 2.6. Conclusions and Recommendations

The long-term and sustainable development of cities and metropolises in Poland requires long-term investments in three fundamental forms of capital: social, environmental-spatial, and economic. When one of these elements begins to dominate, the balance is disrupted, and the consequences are easy to predict –

from socio-spatial segregation, through environmental degradation, to unstable models of economic growth.

Poland demonstrates both achievements and weaknesses. On the one hand, awareness of the Smart Cities concept is growing, the importance of metropolitan cooperation is increasingly emphasised, and the polycentric model of development is beginning to replace the old concentric model. However, the legal and institutional frameworks remain incomplete. Apart from the Upper Silesian–Zagłębie Metropolis, which has obtained formal status, most Polish metropolitan areas lack a clearly defined legal foundation. This results in a weaker capacity to coordinate policies, attract investment, or take advantage of agglomeration effects.

Against this background, the structural challenges shaping the contemporary development of Polish cities and metropolises become clearly visible. Demographic decline is related to population ageing and a decreasing number of people of working age, which in the long term weakens both local labour markets and the ability of local governments to finance public services. The suburbanisation process leads to dispersed development, generates increased infrastructure maintenance costs and increases the dependence of residents on private car transport. Persistent socio-spatial inequalities limit the access of part of the population to adequate housing, efficient public transport, and high-quality public services. At the same time, environmental pressures are intensifying. In large agglomerations, air quality is deteriorating, conflict over land use is increasing, and climate change results in more frequent heatwaves and the risk of flooding.

The complexity of these phenomena means that urban management requires an integrated approach, combining demographic, spatial, transport, and environmental policies into a single coherent system of action.

At the same time, metropolitan areas contain significant scientific, creative and economic potential. They host the most important academic and research centres that attract students and specialists from various fields. They are also home to dynamically developing sectors of business services, modern technologies, and creative industries, which generate jobs and contribute to increased innovation. The cultural and social capital accumulated in metropolises fosters the creation of cooperation networks and the flow of knowledge, while their developed communication and institutional infrastructure enhances their capacity to attract foreign investment. If this potential is properly utilised, it can become an impulse that strengthens the competitiveness not only of individual regions, but also of the entire national economy. The coexistence of serious threats – such as social inequalities, suburbanisation, and climate change – with the simultaneous

presence of significant development opportunities best reflects the specificity of the current stage of evolution of Polish metropolises.

From the perspective of public policy, several key directions of action emerge.

- comprehensive legal frameworks for metropolitan governance are needed, which will stabilise the position of the largest cities and provide them with tools for implementing long-term strategies,
- it is necessary to strengthen cooperation between municipalities within functional urban areas – both through shared planning instruments and through financial incentive systems that promote cooperation instead of competition,
- metropolitan policies should prioritise sustainable transport, affordable housing, and environmental protection, while at the same time being consistent with the overarching objectives of the European Union, such as the European Green Deal,
- development strategies must place greater emphasis on citizen participation, so that residents become not only recipients of public policies but also co-creators of the future of cities.

In the field of research, three areas that require in-depth analysis should be highlighted. Comparative studies are needed on metropolitan governance models in Central and Eastern Europe, taking into account the historical and institutional specificities of the region. At the same time, it is necessary to examine the effectiveness of EU instruments – especially Integrated Territorial Investments – in achieving sustainable development goals. Finally, an important direction will be the development of new quality-of-life indicators that cover not only economic parameters, but also social cohesion, cultural potential, and ecological resilience.

The future of sustainable development of Polish cities and metropolises depends on their ability to integrate social, environmental, and economic dimensions. Achieving this goal requires more than institutional reforms or the introduction of innovative governance models. A cultural transformation is necessary – one that strengthens trust and cooperation between municipalities, supports joint spatial and infrastructural planning, and encourages residents to take co-responsibility for local decision-making. This approach should encompass different levels of governance, linking local initiatives with national strategies.

## 2.7. Conclusions

The undertaking of this scientific research project has allowed the identification of key problems related to sustainable development in the context of

the functioning of Polish cities and metropolises. The identified research gap has been filled and both the main goal and the specific objectives of the study have been achieved. The research problem – formulated as the question "If so, what are the main problems observed in the area of sustainable development in the functioning of cities and metropolises in Poland?" – has thus been resolved.

It should be emphasised here that research on the sustainable development of cities and metropolises requires a holistic approach, one that does not rely solely on a single type of science (for example, empirical sciences, including economics and management), but rather encompasses a broad spectrum of references, since this issue is multifaceted and multidimensional. The authors are aware that this study does not exhaust the subject undertaken, but rather constitutes an initial step toward its further exploration. Nevertheless, the research carried out has made it possible to provide answers to the three research questions posed and generate added value, expressed in the following ways:

- in the theoretical and cognitive dimension – by systematising concepts and definitions and presenting the essence of the emerging problems of sustainable development in the context of the functioning of cities and metropolises, using Poland as an example,
- in the conceptual and methodological dimension – by developing the conceptual assumptions of the investigation, defining the subject, object, temporal, and spatial scope of the investigation, identifying the research method and justifying the selection of research subjects,
- in the empirical dimension – by identifying pathways of sustainable development with respect to Polish cities and metropolises, and by indicating possible future directions for scientific inquiry in this field,
- in the utilitarian dimension – by presenting relevant conclusions and recommendations.

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Chapter 3

# The Role of the Towel Movement in Protecting Public Access to Beaches in Greece: Balancing Law and Management

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## 3.1. Introduction

The history of social movements spans multiple centuries, reflecting shifting political, economic, and social landscapes. With the rise of industrialisation in the nineteenth century, labour and socialist movements took centre stage, as working-class citizens organised to demand improved wages, working conditions, and political representation. The early twentieth century saw the advent of women's suffrage movements, civil rights movements in multiple countries, and anti-colonial struggles, each harnessing new methods of organisation – such as political parties, unions, and advocacy groups – and broadening the definitions of rights and citizenship (Nunn & Whetung, 2019).

By the mid-20th century, movements became increasingly globalised and specialised, addressing a range of issues – from the environment and peace to civil liberties and gender equality. In the 1960s and 1970s, for example, protest movements in the United States and Europe leveraged mass media for visibility, using cultural expressions like music, art, and fashion to create a collective identity and catalyse social change (Rucht, 1990).

In the post-WW2 war period, researchers sought to understand the rise of civil rights movements, labour strikes, and other forms of organised resistance that challenged existing norms and institutions. This provided the foundation for Social Movement Theory, which examines the origins of movements, their modes of organisation, and the strategies they employ to achieve their objectives. Over time, the theory expanded to incorporate perspectives from political science, cultural studies, and economics, offering a comprehensive framework for analysing the transformative potential of collective action. Today, social movement theory is an interdisciplinary field within the social sciences that aims to understand the reasons behind social mobilisation, the various ways it takes

shape, and its possible social, cultural, political, and economic impacts (Jenkins, 1983; Peterson, 1989; Calhoun, 1993; Jasper, 2010).

As Charles Tilly and Sidney Tarrow explain (2015, p. 145 and next), a social movement is a broader, organised effort by a group of people seeking social, political, or cultural change. Within its framework, smaller actions and protests take place, so the protest here will be something short-term, tied to a particular issue or event. It is worth mentioning that social movement and activism are closely related, but they are not the same. Activism refers to individual or group actions - such as protests, campaigns, or organising meetings – taken to promote, impede, or direct social, political, economic, or environmental change. A social movement is a broader, organised effort by a large group of people who coordinate overtime to pursue a collective goal for change, often encompassing many activists and a variety of activities, tactics, and roles (Martin, 2010).

Entering the late 20th and early 21st centuries, digital technologies revolutionised how movements form, coordinate, and spread their messages. Social networks and online platforms enabled decentralised, leaderless protests allowing real-time organisation across vast geographic distances. Today, social movements encompass a wide range of causes, including climate activism, racial justice, and economic inequality, often influencing each other. As these movements evolve, they continue to draw from historical legacies while adapting to new technological tools and economical and political contexts (Davies *et al.* 2016; Vegh, 2003).

Contemporary social movements now employ both digital platforms and traditional mass media, complementing these with grassroots protests held in diverse locations. This multi-dimensional approach enables activists to mobilise public sentiment and challenge established power structures effectively. A remarkable example of this phenomenon is the dynamic tension between the commercial interests of the tourism industry and the public's right to access Greek beaches. In an era where digital connectivity meets in-person activism, this situation offers a compelling case study at the intersection of law, resource management, and civic engagement. By examining how these forces interact, we gain valuable insights into the evolving balance between economic development and community rights.

Greece's coastline, a major source of tourism and a cultural staple, has historically been considered public property. However, increasing pressures for commercialisation and privatisation have sparked debates about how best to balance public interest with economic development and consumer' rights, understood here in a very broad way and therefore also including tourists and residents. This is where social movement comes into play, using collective action, lobbying power and protests, and public awareness campaigns to protect the

beach access of citizens. From a theoretical point of view, the topic draws upon notions of sustainable development, public trust doctrines, and the role of civil movements in shaping policy. This review examines the legal framework that recognises beaches as public resources and examines management approaches that are geared toward sustainable use. It also highlights how grassroots mobilisation can influence legislation and challenge the management of public goods. Ultimately, understanding the impact of resident movement in Greece underscores the broader themes of social justice, environmental stewardship, and democracy in coastal management.

These issues are discussed based on a social phenomenon called the Towel Movement, which is the informal name of the social movement related to access to public beaches. This movement is a grassroots protest in Greece that has emerged as a powerful response to the growing commercialisation of public beaches on Greek islands. Originating in response to unlawful encroachments by private enterprises, the movement contests the practice of restricting free access to beaches through the proliferation of paid sunbeds and umbrellas, frequently accompanied by excessive rental fees. Although Greek law guarantees public access to the coastline, weak enforcement has allowed businesses to extend beyond authorised areas, generating profit at the expense of both residents and visitors.

These developments have intensified public frustration, as residents perceive themselves as displaced from their own coastal areas, while overtourism further amplifies the pressures on natural resources and cultural identity. It can be seen that the movement highlights broader structural issues, including deficiencies in regulatory oversight, legal ambiguities, and the pressing imperative to reinsert public spaces as collective goods accessible to all. Thus, the goal of this work is to characterise the phenomenon of the Towel Movement and to determine its causes and consequences from the law, business, and social perspectives. To achieve this goal, we use the case study method, which involves an in-depth, detailed examination of a specific case within its real-life context (Lloyd-Jones, 2005).

## 3.2. Methodology

The subject of this study is the social phenomena called the Towel Movement, a grassroots protest in Greece. The analysis's main goal is to determine the causes and effects of this social movement, therefore, the case study analysis is the adopted research method. The case study method is a qualitative research approach that involves a detailed and in-depth examination of a specific case or

phenomenon within its real-life context. The methodology includes the analysis of secondary data for the following areas:

1) collection and analysis of social media data on the emergence and course of the Towel Movement; mainly data came from Facebook pages: Κινημα «Σώστε Τις Παραλίες Της Νάξου» (Save the Beaches of Naxos NOW!) and Κίνηση Πολιτών Πάρου (Paros Citizens' Movement),

2) analysis of the legal acts in force in Greece concerning public goods and, in particular, access to public beaches,

3) statistical data analysis on tourism in Greece and the phenomenon of overtourism,

4) analysis of legal changes introduced in Greece regarding access to the beach.

The data collection process consisted of determining: where the movement started and how it spread (publications from the Greek press and mass media), determining whether the movement is present in social networks and which ones (two Facebook pages were found); the next step was the analysis of the obtained content starting from the publication from May 2023 until the completion of the text (March 2025). An attempt was also made to establish personal contact with movement activists in order to conduct interviews, but this was not successful.

In addition, local publications on the journals' websites, such as https://naxostimes.gr/, were analysed, as well as articles and reports related to the movement published on #SaveNaxosBeaches. The case study analysis is mainly based on activities related to the islands of Paros and Naxos for two reasons: on the first island, the movement started and its activities are long-term and well-organised (Bateman, 2023); the second island, in turn, has a well-run Facebook page where both activists and residents publish their actions and comments (Avigur-Eshel & Berkovich, 2017). The research method used was content analysis, which is a systematic method of analysing written, visual, or spoken communication. In this case, it was qualitative research (interpreting themes, meanings, and patterns).

Since the study is exploratory in nature, we do not formulate hypotheses, but the study is guided by research questions.

- What are the primary causes driving the emergence of the Towel Movement in Greece?
- How has the Towel Movement influenced public policy and regulatory enforcement regarding beach privatisation in Greece?
- How did the Towel Movement impact beach management in Greece?

The analysis undertaken in this work was conducted from the point of view of social movement theory, public goods theory, and sustainable development.

## 3.3. Background – Legal Regulations

In Greek society, there is a common belief that beaches belong to everyone and are part of Greek identity. Greeks often mention the protection of beaches by referring to their Constitution, especially article 24, which states: "The protection of the physical and cultural environment is an obligation of the State and a right of everyone" (Giannakourou, 2023). Although this provision does not explicitly refer to the coastline environment, the Constitution provides a general framework for protection. Of course, specific measures for safeguarding various aspects of the environment are enacted through other laws passed by the Greek Parliament. However, the constitutional commitment to environmental protection implicitly extends to the seas and the coastlines.

The above is fortified by the jurisprudence of the Council of State, which is the Supreme Administrative Court of Greece (the Council of State, www.adjustice.gr). It is mentioned there that "protection status of coasts is usually the object of special laws, but, in any case, coasts are directly protected by the article 24 of the Constitution" (Council of State Case 3346/1999; Council of State Case 2506/2002; Council of State Case 2713/2013; Council of State Case 3944/2015). In its rulings, the Council of State has stated that the constitutional protection of the coasts is based on preserving their natural use, particularly by guaranteeing everyone free access. Consequently, the coasts must not be exploited in ways that interfere with their natural use. So, this includes unimpeded visiting, staying, passing through, and swimming.

Another legal act that addresses the issue of public goods is the Greek Civil Code, especially Articles 967 and 970 (Greek Civil Code, Presidential Decree 456/1984). These articles say that: 1) Things of common use are especially free and perpetually flowing waters, streets, squares, quays, harbors and bays, the banks of navigable rivers, large lakes and their banks (Article 967). 2) In common things, special private rights can be acquired by granting authority under the terms of the law, provided that these rights serve or do not negate the common use (Article 970). As it is obvious from the above articles, the Greek Civil Code recognises all coastal areas as things of common use and with free access to everyone.

The key legal act that also should be mentioned, as it includes special regulations regarding coastlines, is a document called "Foreshore, beach and other provisions" (Law 2971/2001). In particular, Articles 2 and 13 are relevant to the issue of coastal management and beach access. Article 2 establishes that beaches – and the surrounding foreshore and riparian zones – are state-owned common properties, managed according to principles of sustainability and spatial planning. It states that the primary purpose of these areas is to ensure free and unhin-

dered public access, thereby maintaining a natural link between the land and the sea. The state is responsible for their protection through an integrated system of management and supervision. Furthermore, any construction or structures on these beaches are generally prohibited, except for projects that enhance access (such as for people with disabilities) or serve an overriding public interest in safety, health, and environmental protection. Even when private property lies between a public road and the beach, there must be an unobstructed passage to guarantee safe access for everyone. Important provisions are also included in Article 13, which says that the granting of simple use of the beach is permissible, on condition it does not violate its destination as a common good. It also cannot alter its natural morphology and vital elements. Furthermore, the law permits the simple use of beaches for activities that benefit bathers or enhance public recreation, such as renting marine recreational equipment, deckchairs, umbrellas, operating refreshment bars, and providing table seating. These activities are allowed as long as public access remains unimpeded. Additionally, each concession is limited to a maximum area of 500 square meters, with at least 50% of that area required to remain as free, open beach.

The above-mentioned documents regulated the use of coasts and beaches, but their regulatory efficiency proved weak. New law 5092/2024 that was enacted in 2024 has more restrictive conditions. First of all, it has more effective and austere provisions for those who do not conform and can prove better for the sustainable use of coastal areas. Notably, the law reiterates certain provisions from 2001, such as limiting concession areas to a maximum of 500 square meters and requiring that at least 50% of the beach remains unoccupied. But its primary objective is to regulate and make transparent the concessioning process of beachfront areas, particularly the use by hotels and other establishments. Thus, this law not only outlines the rules for beach access but also establishes guidelines for obtaining data about granted concessions, providing public access to information (Kordonis, 2024).

The new regulations (5092/2024) are detailed in several aspects – Article 8 establishes minimum obligations for concessionaires to ensure free public access to beaches, including the installation of facilities for persons with disabilities. The new law also prohibits the concession of beaches that are less than 4 meters in length or width, or where the total coastal area is less than 150 square meters. Moreover, in Article 11 the detailed provisions of the concession procedures are depicted, as well as the method of determining the concession fee (the concept of auctions for beach use has been abolished).

## 3.4. Overtourism in Greece – Dimensions

Overtourism is a phenomenon where a destination experiences an excessive influx of tourists, surpassing its capacity to accommodate them sustainably. This imbalance can lead to environmental degradation, strained infrastructure, disrupted local communities, and a decreased quality of life for residents, as well as a degraded experience for visitors. Essentially, overtourism occurs when the negative impacts of tourism begin to outweigh its benefits. In these cases, popular natural landscapes and historical sites can suffer from erosion, pollution, and overuse. This can potentially cause long-term damage that affects both the environment and the cultural heritage of the area. It can also negatively influence the standard of living of local communities (Dhiraj and Kumar, 2021; Kellman, 2024).

According to the WTO, Greece is among the top ten most visited countries (World Tourism Organization, 2024) – this means that Greece is included among the leading tourist destinations and probably will have to face the negative effects of tourism. A study by PwC suggests that in 2024 arrivals to Greece could reach an all-time high of 41.6 million; this would represent a 22.4% increase compared to 2023, when arrivals exceeded 36 million (Cyprus Mirror, 2025). It can therefore be assumed that overtourism will appear in Greece, especially on Greek islands (Table 3.2).

The average population density in Greece is 81 people per square kilometre (World Bank 2022), but the density index increases many times while taking into account the tourists – even to several tens of thousands in case of such islands like Santorini, Mykonos, Paros or Skiathos. Of course, the crowds of tourists appear mainly in the summer period, which in Greece lasts almost six months. This means that for half a year, local communities host hundreds of thousands of visitors.

Evidence of overtourism can appear in various aspects and areas. For example, local roads and parking lots can be congested with tourists and local residents may have difficulty using the road infrastructure; parks, museums, and popular neighbourhoods can become overcrowded, limiting residents' access; the demand for short-term accommodations can drive up rental prices and property values, making it difficult for locals to afford housing in their own communities (Verísimo *et al*., 2020). The signs of overtourism concern not only tourism on islands, but also tourism in large cities such as Athens (Gencturk, 2024). Numerous districts in Athens have been taken over by short-term rentals, turning them into hubs for tourist accommodation and creating a shortage of available housing for workers, students, and families. In 2024, Greece's prime minister admitted that the country was facing an overtourism issue, though he believed it was limited

to Santorini and Mykonos. He also announced that Greece would impose a tax on cruise passengers departing on these islands and would prohibit new short--term rental properties in three central districts of Athens (Habtemariam, 2024). So, the national authorities also noticed the problem of overtourism.

Table 3.1. Residents and Tourist Arrivals on the Most Popular Greek Islands (Number of People Travelling to Greece)

| The island | Population of residents | Area (sq km) | Tourists' arrivals (2023) | Density index |
|---|---|---|---|---|
| | *a* | *b* | *c* | *c*/*b* |
| Santorini (Thira) | 19,000 | 75.94 | 3,400,000 | 44,772 |
| Mykonos | 10,700 | 86.33 | 2,700,000 | 31,275 |
| Paros | 14,500 | 195.55 | 3,200,000 | 16,364 |
| Skiathos | 5,802 | 49.9 | 550,000 | 11,022 |
| Kos | 37,089 | 295.3 | 2,300,000 | 7,789 |
| Rhodes | 125,000 | 1,400.68 | 6,100,000 | 4,355 |
| Naxos | 21,700 | 428.66 | 2,070,000 | 4,829 |
| Corfu | 67,000 | 610.9 | 1,800,000 | 2,946 |
| Zakynthos | 41,180 | 405.55 | 1,100,000 | 2,712 |
| Crete | 617,360 | 8,450 | 5,500,000 | 651 |

Source: own work based on (Vandarakis *et al*., 2023) and data from: Santorini: https://www.reuters.com/world/europe/greeces-santorini-bursts-with-tourists-locals-call-cap-2024-07-27/; Mykonos: https://www.mykonosvoice.gr/news/to-paradoxo-tis-mykonoy/; Corfu: Corfu Press, https://www.corfupress.com, article from 14/01/2024, INSETE: Aúxīsī 8,4% kai 1,8 ekat. Touristes…; Rhodes: https://www.rho-airport.gr/en/rho/air-traffic-statistics; Paros: https://www.euro2day.gr/news/eco-nomy/article/2251474/paros-h-ektoxeysh-ton-airbnb-kai-oi-kryfes-klines-.html; Zakynthos: https://ermisnews.gr/me-9-apochaireta-to-2023-i-touristiki-zakynthos/; Skiathos: https://www.ot.gr/2024/01/27/tourismos/skiathos-kleinoun-oi-symfonies-gia-ti-nea-touristiki-periodo-poioi-einai-oi-stoxoi/; Kos: https://www.kgs-airport.gr/en/kgs/air-traffic-statistics

Against this background, social protests have emerged in Greece in recent years – they fight for the rights of people to access and enjoy natural spaces while advocating for the sustainable use of tourist destinations. These grassroots argue that nature should not be monopolised by commercial interests, but should remain a shared resource for all, preserving its integrity for future generations. This type of action group is also the Towel Movement discussed in this work (Bateman, 2023).

The development of tourism obviously has two sides – in 2023, tourists spent over 22 billion USD in Greece, providing income and support to many families (Figure 3.1).

In 2023, employment in the hotel industry increased by 12.6% compared to the previous year and exceeded 208,000 job positions. The increase in turnover and employment is also connected to the investments made by the hoteliers,

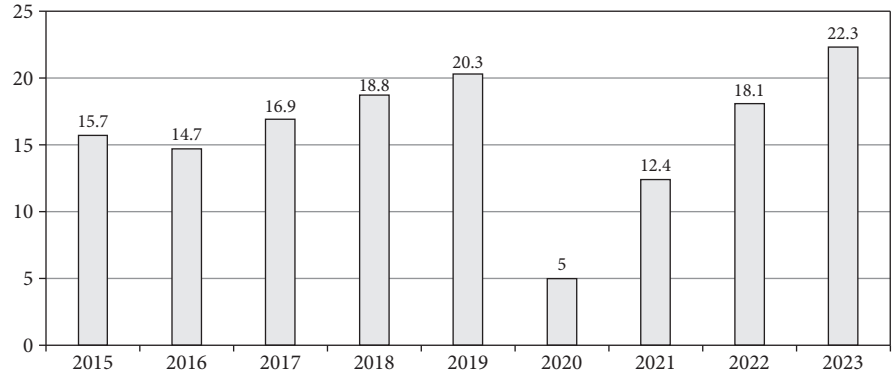


Figure 3.1. Tourists' Spending in Greece (in billion USD)
Source: https://roadgenius.com/statistics/tourism/greece/

which were at 761 million EUR for 2023, 13% of which were related to sustainability actions (Annual Survey for the Hotel Sector, 2023). Overall, in Greece travel and tourism generated, directly and indirectly, around 810,000 jobs in 2023. The total number of jobs was expected to reach an estimated 860,000 in 2024, exceeding pre-pandemic levels (Statista, 2024).

## 3.5. Case Study Analysis

In May 2023 on Paros Island the civic movement known as "The Movement for Free Beaches" emerged (Bateman, 2023). From May 2023 protests grew and spread to other islands (Figure 3.2), in June 2023 it was also visible on the island of Rhodes for example.

In July 2023, on Naxos Island, formally the Movement "Save the Beaches of Naxos NOW" was created. At this time also social media sites, such as "Save Paros" and "Save Naxos Beaches," started to operate, as well as websites such as #SaveNaxosBeaches. Similar movements took place on other Greek islands and were generally called the Towel Movement, because the problematic issue was that the average citizen could not put a towel on a beach already occupied by a hotel and had to pay for a sunbed and an umbrella. Consequently, the towel became a symbol of discontent among the inhabitants of tourist destinations.

In social networks such as Facebook, in statements from movement leaders, and in interviews and press reports, one can see the diverse problems that the Towel Movement wanted to address. So, the goals are varied: starting with making tourists and entrepreneurs aware that the law is being violated, then forcing the tourism industry to comply with the law, and finally forcing local authorities to control and enforce regulations, primarily those related to the protection of

nature and the issue of citizens' normal life. One can risk saying that the general goal is also to change the mentality of the Greeks, which is visible, for example, in news published by local media (Keep Talking Greece, 2023):

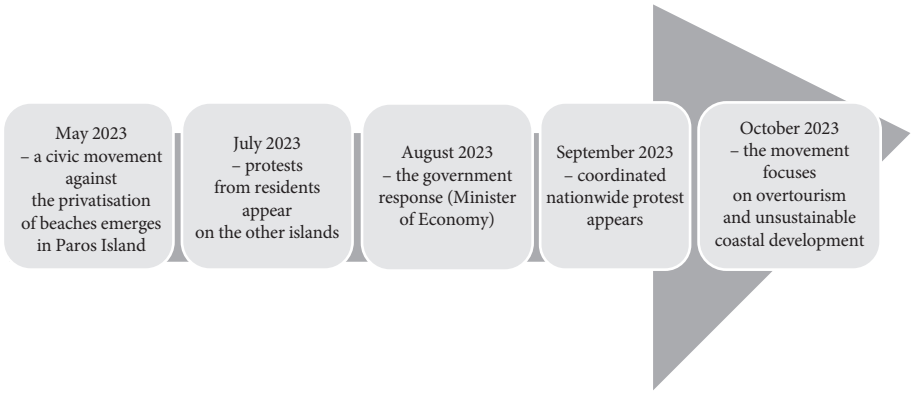


Figure 3.2. The Development of the Towel Movement
Source: own work.

More than 250 residents on Paros defied the uncontrolled spread of privately run loungers and umbrellas on the popular Santa Maria beach demanding space to put down their towels. The Municipality Council had decided to not lease the beach for three years.

"We kicked off the campaign at a beach we consider emblematic, as there is no question of legal leasing here. The Paros Municipal Council decided earlier this year not to auction any part of the beach, as it is a Natura site. Yet 80–85% of tiny Santa Maria is covered in loungers," Damianos Gavalas, one of the protesters told us. According to neolaia.gr, when protesters told the beach bar owner he was illegal, he responded "I know I'm illegal! Call the police!"

Despite the applicable regulations, the licenced beach users still behave illegally – according to the news from August 2023 (Koutroumbis, 2023) not only do businessmen occupy additional square metres of beach, but they sometimes even operate completely illegally. Taking all circumstances into account, it seems that the citizen movement has a strong case to address the situation because, first of all, examples of law violations in coastal areas were all too common. In the open letter from the Movement "Save the Beaches of Naxos NOW" (https://www.facebook.com/groups/293254203200685/) we can see the problems such as:

1) occupation of a larger area of public space than the relevant authorisations for the simple use of common beach areas,

2) placement of tables and chairs, parasols and sun loungers at a much higher density than permitted and at less than 5 m from the shoreline,

3) noise pollution, since the noise level of the music exceeds the maximum permitted limit of 50 decibels,

4) strong lighting of the sea and beach at night,

5) obstruction of easy access to the coast and the beach; private beaches excluding public access to them with deterrent signs or fences,

6) infringement of the law on the natural environment, which in the case of Naxos consists almost exclusively of protected habitats of the European Natura 2000 network,

7) creation of permanent/semi-permanent structures on the beach and sand dunes,

8) removal of limestone or other rocks, continuous wetting of the sand dunes with fresh water in order to create roads,

9) subsequent elimination of local flora by removal of local vegetation and planting of alien species (Save the Beaches of Naxos NOW; Lianós, 2023).

The causes of dissatisfaction and frustration of citizens are multidimensional; thus, the beginning of the Towel Movement can be understood through several lenses (The Greek Analyst, 2023; Stamatoukou, 2023; Keskin, 2023):

*From a business and legal perspective*, opponents argue that privatising beaches shifts control from public hands to private entities, potentially creating monopolies that exploit natural resources for profit. This change raises concerns about the fair and transparent application of existing laws that guarantee public access to coastal areas. Many locals believe that such privatisation conflicts with traditional legal protections and undermines the notion that beaches are part of the national heritage rather than commodities for private gain (Keskin, 2023). Tourism stakeholders fear that further privatisation will tarnish the island's reputation as a destination where natural beauty and open access are paramount. The unique charm of Paros was found in its beaches – a key draw for tourists seeking authentic experiences. Limiting access through privatisation can deter visitors who value sustainability and cultural integrity, potentially leading to a decline in tourism dependent on the island's traditional attraction (Kaimovs and Skarupins, 2024).

*From the standpoint of public rights*, beaches are seen as communal spaces that belong to all citizens. Activists argued that privatisation restricts the freedom of locals, tourists, and marginalised groups to enjoy these public areas. The movement underscored that such spaces were vital for community interaction and cultural expression. By transforming a public resource into a private asset, there is a risk of deepening social inequality, where only those with sufficient means can enjoy the beach, thus alienating the broader community (Stamatoukou, 2023; Keskin, 2023).

*Environmental and sustainability concerns* also drew the movement. Critics argued that when profit was the main objective, the long-term health of coastal ecosystems might be compromised. Private operators might prioritise short-term economic gains over the careful and sustainable management of these natural areas. This could lead to overdevelopment, environmental degradation, and a loss of biodiversity – outcomes that conflict with broader goals of environmental preservation and responsible tourism.

In August 2023, with the issue of illegal beach occupation gaining momentum and the voice of the Towel Movement growing stronger and travelling to several islands, an issue highlighted by in, the Greek government was intervening and declaring its determination to deal with the delinquents. As a result, in August 2023, Kostis Hatzidakis, Greek Economy and Finance Minister, published on X:

> As Minister responsible for Public Property, I have clear direction from the Prime Minister to enforce legality, where there is provision of services on the beaches. And this applies to all public property of course. But personally, allow me to say that I have no reason to compromise with old-party perceptions of the type "you don't get bored, this is Greece, a miracle every 3 days, etc." In the context of this perception, a General Secretariat for Public Property was established after the elections. And since the appointment of the new General Secretary on July 21st until today, the inspections are approaching 1,000, while the violations found exceed 350. We did not claim to have solved all of Greece's problems in 4 years. However, just as the government clashed in Mykonos before the elections over the well-known arbitrariness, so it will clash over the beaches: For reasons of respecting the law, upgrading the country's tourism product, and protecting the public interest (Hatzidakis, 2023).

As a result of the Towel Movement, in April 2024 the Greek government introduced the MyCoast app (Greek Travel Pages, 2024). Thanks to this app, visitors to beaches across Greece who encounter violations can now report them directly. Users can download the MyCoast app for free on their smartphones or tablets, enable GPS services, locate the beach on the map, and learn more about the status of the concession on that beach. Municipalities, the Police, and State Properties Services are responsible for conducting inspections, with fines ranging from 2,000 to 60,000 EUR and potentially suspending concessions for regulation violations (Raptis, 2024). The information provided on the Economy and Finance Ministry's website states that the user can submit either anonymous or named report, which may cover issues such as: obstruction of free access, obstruction of access for disabled persons, unauthorised occupation, poor cleanliness, failure to post a sign, poor infrastructure, alteration of the morphology of the coastline, and absence of lifeguard (Ministry of Finance, 2024).

By early September 2023, what began as a local campaign had evolved into a national movement. Soon, with the concept of a Beach Towel revolt resonating beyond its original roots, the protests spread not only to Greece, but also to Turkey's bustling beach resorts. Analysing information and entries in social media, one can notice that the movement is changing its character – from merely fighting for free beach access to challenging the broader issues of overtourism and rampant development in Greek beach resorts. Today activists deal with compliance with the law in the context of the Natura 2000 area, deal with the excessive expansion of concrete infrastructures, deal with illegal swimming pools that should be reported and cannot be built without authorisation, with garbage left after the summer season, etc., which can be visible for example in Facebook posts (texts translated from Greek from https://www.facebook.com/groups/293254203200685/):

> 22 July 2024 – 712 swimming pools in Naxos were counted (there are others that have not yet been recorded, because Google maps in Naxos are very old). We have a water shortage.
>
> 26 October 2024 – The season is over, but the garbage of the air-conditioned businessmen remains on the beaches and in the sea.
>
> 31 October 2024 – If this organizational chart that we experience daily in Naxos is not reversed, the destruction of the environment of Naxos will continue!
>
> Of course, this organizational chart was inspired and created by high-ranking officials of the state apparatus because their relatives invest and are active in the sale of Naxos and not only!

So, today activists focus on ensuring legal compliance in environmentally protected Natura 2000 areas, opposing the overexpansion of infrastructure, and reporting unauthorised swimming pools that violate construction laws and cause excessive water consumption. In addition, they draw attention to issues such as waste left behind after the tourist season, which is frequently discussed on social media.

## 3.6. Discussion

The Towel Movement emerged primarily as a reaction against the privatisation and commercialisation of public beaches in Greece. The analysis carried out shows that key causes include illegal use of beaches and privatisation, weak regulatory enforcement, overtourism, and unsustainable development, as well as loss of public rights (Figure 3.3).

Despite the legal and constitutional guarantees in Greece that ensure public access to coastal areas, insufficient enforcement has facilitated the proliferation

of private intrusions. This discrepancy between the statutory provisions and their practical implementation has contributed to considerable public discontent. Therefore, the movement supports the assumption that public spaces should remain accessible to all, preventing the exclusion of locals and visitors who may not wish to pay for access.

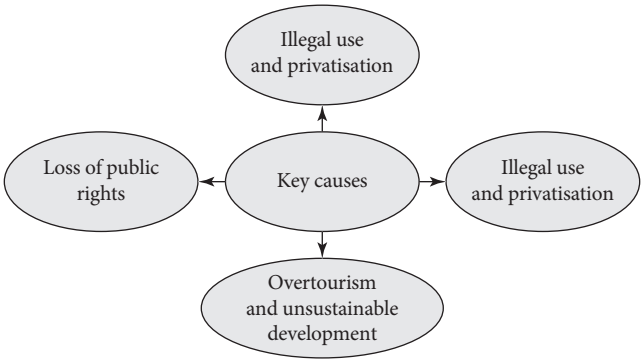


Figure 3.3. The Main Causes of the Towel Movement
Source: own research.

As mentioned, Greek constitutional provisions and other laws guarantee free public access to coastal areas, and the movement reinforces the importance of upholding these rights. So, the movement highlights deficiencies in regulatory mechanisms and pressures authorities to take corrective actions, potentially leading to improved governance and policy enforcement.

Another challenge concerns the large influx of tourists arriving on the Greek islands each summer. This large number of visits not only accelerates environmental degradation, but also intensifies residents' perceptions of displacement and cultural erosion. The issue is inherently complex because increasing the number of tourists generates greater financial returns for the tourism sector, thereby creating a conflict of interest among different stakeholders. However, tourism development provides substantial economic benefits, including employment opportunities, support for local businesses, and significant revenue generation for both private enterprises and public infrastructure. For many Greek islands, tourism constitutes the main source of income, financing essential services such as road maintenance and the preservation of cultural heritage. However, mass tourism strains natural resources, leading to water shortages, challenges in waste management, and damage to fragile ecosystems. In addition, rising real estate prices and the proliferation of short-term rentals make it increasingly difficult for locals to afford housing. This, of course, can lead to future tensions between residents and the tourism sector. Ultimately, while tourism remains a vital economic

driver, striking a balance between growth and sustainability is crucial to ensure that the islands remain both a welcoming destination and a livable home for future generations.

The analysis carried out shows that despite the fact that legal regulations concerning coasts and beaches have existed in Greece for a long time, the Towel Movement has led to a closer look at them and the improvement of existing loopholes. Today we can say that the movement had a notable impact on public policy and regulatory enforcement by: encouraging government action, introducing a technological tool, strengthening inspection and penalty systems, reassessing the policy framework, and introducing new regulations (Figure 3.4). These effects are immediate and visible.

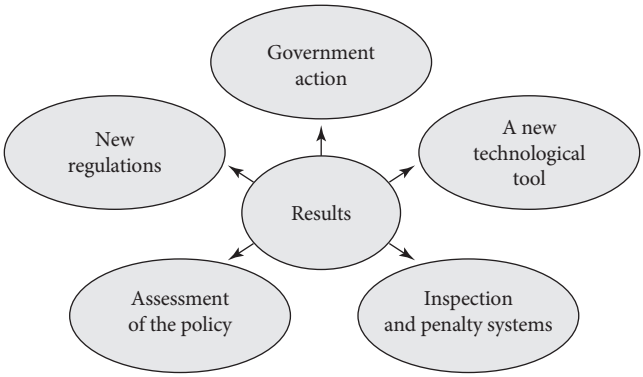


Figure 3.4. The Immediate and Visible Results of the Movement
Source: own work.

The widespread public support and attention of the movement in the media pressured the Greek authorities to respond. In reaction, the government increased its regulatory oversight over beach concessions; the system for granting licences has been changed, and the method of their control has been tightened. To make this possible, modern technological solutions have been introduced – as mentioned, in April 2024 the government launched the MyCoast app. By facilitating monitoring, the app strengthened enforcement mechanisms. Despite explicit constitutional and legal provisions that guarantee public access to coastal areas, weak enforcement and existing legal loopholes have allowed private interests to dominate beach spaces. This regulatory deficiency has generated significant public discontent and has served as a catalyst for collective action. In response to this movement, local and national authorities have intensified surveillance, conducted nearly 1,000 inspections, and identified more than 350 violations, representing approximately 35% of the cases examined. This shows the extent

of the irregularities. The regulatory framework now includes tougher penalties to deter illegal use of the beaches. Moreover, the movement has led to a broader reconsideration of existing laws and policies governing coastal management, with authorities now more focused on ensuring that economic development and tourism do not compromise public access or environmental sustainability.

The one can also consider the less visible and longer-term effects of the Towel Movement. The protests have reaffirmed the belief that beaches are public assets that should remain accessible to all citizens. This has led to a renewed focus on the preservation of public spaces against commercial exploitation. In response to the demands of the movement, the authorities enforced sustainable management guidelines. Due to this, values such as nature, sustainable development, and preservation of resources for future generations, as well as good living standards of local communities were emphasised.

Beyond influencing policy reforms, the movement has stimulated a broader cultural reassessment of the significance of public goods. It has contributed to a shift in both local and governmental perspectives toward prioritising environmental stewardship, community rights, and sustainable tourism practices in the management of coastal areas. In particular, the movement also increased the awareness of tourists about the living conditions and rights of local communities.

Apart from the obvious successes, the Towel Movement faces several significant challenges that are difficult to overcome and may threaten the durability of changes. First and foremost, it is a matter of benefits for business: private businesses involved in beach concession practices often have strong ties with local authorities and benefit significantly from the tourism economy. This intrusion makes it challenging to implement stricter regulatory enforcement and policy changes. Mainly because powerful economic interest groups may oppose reforms that threaten their profits. Moreover, although Greece's legal framework guarantees public access to beaches, enforcement has historically been inconsistent, so the stability of the effects is difficult to determine. The persistence of illegal occupations and unauthorised developments highlights the difficulty in closing legal loopholes and ensuring that existing laws are rigorously applied. This gap between law and practice remains a critical hurdle.

Finally, the movement aims not only to enforce laws, but also to shift the cultural perception that beaches, as a public heritage, should remain accessible to all. Overcoming long-standing attitudes that have gradually accepted or even benefited from the commercialisation of these spaces is a slow process. Together, these challenges highlight the complex interplay between public beach management, economic interests, legal enforcement, cultural values, and institutional frameworks. Overcoming them requires sustained collective action, ongoing

public pressure, and comprehensive reforms that align the diverse interests of all stakeholders. From this perspective, the Towel Movement has a chance to permanently change tourism on the islands, because nonviolent protests are most effective at mobilising supporters (Shuman *et al*., 2024).

## 3.7. Conclusions

The goal of this work was to characterise the Towel Movement phenomenon and identify its causes and consequences from a legal, business, and social perspective. Referring to this goal, it can be stated that:

1. The main reasons for the emergence of the movement are loss of access to public beaches, treated as a loss of citizens' rights, then illegal use of beaches and privatisation, weak regulatory enforcement, overtourism, and finally unsustainable development of tourism.

2. The movement initiated a discussion on the effectiveness of the law and on identifying loopholes that allow illegal activities; although the new law repeated the main provisions of the legal acts concerning beach use, it made them more specific; currently, failure to comply is associated with financial penalties. The inspection bodies were also established, and in effect, the government tightened the licence granting system and improved the monitoring of compliance with legal requirements.

3. The movement reinforced the principle that beaches are public assets. This led to a stronger commitment to protect public spaces from commercial exploitation, with authorities prioritising local community interests over private profit motives. The protests also emphasised sustainability and environmental conservation in beach management. This has resulted in changes in beach management and stricter guidelines for sustainable tourism, ensuring that coastal ecosystems are not sacrificed for economic gain.

The Towel Movement constitutes a grassroots response to the privatisation and commercialisation of public beaches in Greece. It has exposed significant deficiencies in regulatory enforcement and has emphasised the necessity of sustainable management practices that ensure both public access and environmental protection. Through collective action, digital mobilisation, and public advocacy, the movement has exerted influence on governmental policy regarding beach management. Despite ongoing challenges, including entrenched economic interests and institutional inertia, the movement has effectively reaffirmed the principle of beaches as public goods, building the way for a more balanced approach to tourism development that safeguards both community rights and natural resources.

## 3.8. Future Research

Building on the findings of the Towel Movement study and its role in protecting public beach access in Greece, future research could:

1) conduct a longitudinal study to track the movement's influence over time, assessing whether policy changes, enforcement tools (e.g., MyCoast app), and shifts in public opinion persist,

2) use interviews with activists, officials, and tourism representatives to gain deeper insights into motivations, challenges, and outcomes,

3) examine the economic implications of public access versus privatisation through cost-benefit analyses and sustainable tourism models.

## 3.9. Limitations

This research relies mainly on secondary data (media reports, legal documents, literature), which limits depth compared to primary methods such as interviews or observations. The case study approach, while detailed, restricts generalisability beyond Greece's unique socio-political and cultural context. The interplay of economic, environmental, and cultural factors further complicates the analysis, highlighting the need for interdisciplinary research. However, future studies can expand on these insights to produce more generalisable and policy--relevant findings on social movements and sustainable coastal management.

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Chapter 4

# Comparative Analysis of Socio-economic Cooperation within Metropolitan Areas in the EU and Ukraine: Implications for the Lviv Metropolitan Area

Nazar Hlynskyy

## 4.1. Introduction

Over the last three decades, accelerated urbanisation has transformed major urban centres into poles of socio-economic growth. These centres increasingly concentrate investment and innovation as well as critical social functions, from expanded labour markets to dense networks of specialised services. European governments have responded through asymmetric institutional arrangements. In France, metropolitan areas have been granted substantial fiscal autonomy and priority access to funding for transport and social programmes. In Germany, metropolitan governance often relies on "soft" planning through voluntary agreements between the core city and surrounding municipalities[1]. In Poland, metropolitan associations foreground inter-municipal cooperation in domains such as joint economic promotion and workforce development. Comparative OECD studies indicate that integrated service provision and shared infrastructure are the main catalysts of successful metropolitan cooperation (Demazière *et al*., 2022; OECD, 2023).

Inter-municipal cooperation is particularly salient for Ukraine, which embarked on deep fiscal decentralisation and public administration reform before Russia's full-scale invasion in 2022. Fragmented local resources hinder the implementation of large-scale social, transport, and environmental projects despite growing demand. The Association "Lviv Agglomeration", founded on 29 April 2024, illustrates how the voluntary association of territorial communities around a city of more than 800,000 inhabitants can strengthen regional competitive-

[1] Throughout, the term "municipality" is used in a pan-European sense to denote the basic unit of local government.

ness through joint action on mobility, waste management, and cultural policy. At the same time, this experience reveals gaps in systematic financial instruments and legislative guarantees needed for long-term socio-economic partnerships (Council of Europe, 2024). This chapter, therefore, compares approaches to inter-municipal cooperation within metropolitan areas across EU member states and Ukraine, demonstrates how joint responses to socio-economic challenges stimulate metropolitan formation, and formulates recommendations for strengthening territorial partnerships in the Lviv metropolis and, more broadly, across Ukraine.

## 4.2. Methodology

This study combines desk analysis of national regulatory acts with OECD statistical databases and conducts a cross-country comparison of France, Germany, Poland, Spain, and Ukraine. It also consults existing survey datasets, which link macro-level institutional conditions to micro-level behaviour of local stakeholders. The source base therefore comprises official legislation, governmental and intergovernmental reports, OECD statistics, and ready-made sociological data; the research design does not include primary interviews or field expeditions.

The analysis constructs a comparative matrix that systematises inter-municipal cooperation across four dimensions: legal framework, mode of establishment, budget architecture, and priority spheres of activity. The study also applies legislative content analysis to isolate three interaction models – top-down, bottom-up, and hybrid – which the article visualises in a synthesis diagram. This approach secures the comparability of cases and reveals shared and distinctive features in the organisation of metropolitan associations.

Focussing on the Ukrainian context, the research analyses secondary data from a 2023 Kyiv International Institute of Sociology survey covering labour migration, service utilisation, and public attitudes toward inter-municipal cooperation in the Lviv Agglomeration. By integrating these empirical findings with the comparative normative-financial analysis, the study tests its generalisations on a practical example and mitigates bias that could arise from relying exclusively on documentary sources.

## 4.3. Mechanisms and Incentives for Inter-municipal Cooperation within Metropolitan Areas

Inter-municipal cooperation may originate from top-down or bottom-up, depending on the institutional environment (Figure 4.1).

Public policy and legislative incentives are pivotal to creating favourable conditions for inter-municipal cooperation. Many European Union governments have introduced legal frameworks that enable territorial communities to formalise collaboration by establishing joint agencies, associations, unions, or other legal entities. In France, for instance, various forms of *intercommunalité* have emerged since the late twentieth century – voluntary inter-municipal associations through which municipalities may jointly perform tasks. Legislation often embeds financial incentives: the State provides additional subsidies or benefits to associated communities. France's dedicated "inter-municipal cooperation grant" (part of the general grant, DGF) is distributed among inter-municipal unions and rises with the degree of integration. In this way, the central government encourages municipalities to overcome parochialism and collaborate on a larger territorial scale.

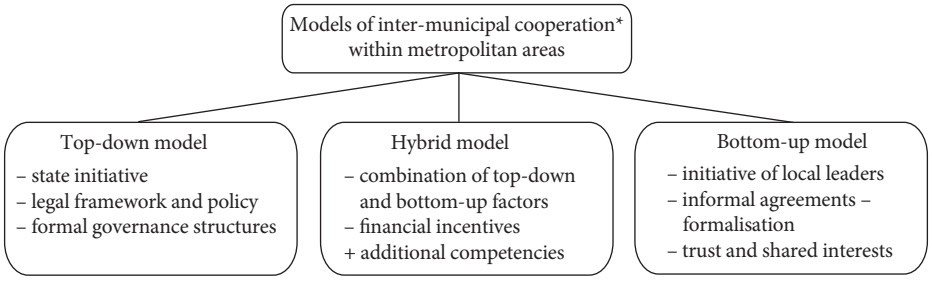


Figure 4.1. Models of Inter-municipal Cooperation within Metropolitan Areas: A Synthesis of European Experience

Source: the author's compilation.

Cross-national experience shows that state financial incentives rank among the most effective drivers of successful cooperation. The OECD notes that in countries with well-developed inter-municipal cooperation within metropolitan unions, central or regional authorities often earmark grants and resources accessible only when communities undertake joint projects or form shared organisations. Such incentives may include targeted subsidies, infrastructure co-financing, or authorisation to introduce dedicated revenue streams for municipalities (OECD, 2024). In Poland, a distinctive mechanism applies to the Upper-Silesian–Zagłębie Metropolis (GZM): 5% of the personal-income tax collected from residents of its territory is transferred annually to the union, thus creating a common budget for regional projects (e.g., an integrated public-transport system or infrastructure development). In addition, member municipalities may pay contributions to the inter-municipal body to implement specific joint tasks. In particular, all cities in the GZM agglomeration have delegated public-

-transport responsibilities to the metropolitan authority and make an annual contribution to finance them. These financial instruments – from state subsidies to supplementary levies or targeted contributions – constitute powerful drivers of cooperation by enabling the pooling of resources for joint projects (Krukowska & Lackowska, 2017).

EU Structural Funds and related programmes have also acted as important catalysts, particularly in Central and Eastern Europe. Access to European Structural and Investment Funds typically requires the design of complex projects at the metropolitan or multi-municipal scale. This requirement encourages municipalities to forge alliances, jointly develop strategies, and apply for EU consortium grants (Mendez, van der Zwet & Borkowska-Waszak, 2021). During the 2014–2020 cohesion-policy period, the Integrated Territorial Investment (ITI) instrument targeted large urban regions. To secure ITI funding, neighbouring cities established joint steering committees and agreed on action plans. Evidence from Poland, the Czech Republic, Romania, and elsewhere shows that this approach "revitalised" cooperation: municipalities previously sceptical of partnerships joined forces to avoid forfeiting substantial EU resources (Zwet *et al*., 2017). Access to structural funds frequently becomes a decisive incentive: even communities with a history of rivalry collaborate to obtain European development financing. In the Czech Republic, for example, the municipalities around Brno created a metropolitan steering committee to coordinate ITI projects, responsible for strategic planning in the region with EU-funded priorities in transport, the environment, innovation infrastructure, and social housing (Kunc *et al*., 2023). Similar trajectories have been observed across Europe – from Sofia to Lisbon – where EU funds spurred partnerships that often persisted beyond the life of individual projects (Cotella *et al*., 2021).

Beyond regulatory and financial factors, the bottom-up dimension is crucial: leadership by local actors and awareness of shared interests. In many EU countries, inter-municipal partnerships emerged voluntarily even before formal requirements were introduced. Although such cooperation rarely arises entirely spontaneously, where leaders of neighbouring communities maintain close working relations and mutual trust, collaboration may begin from the bottom up, without direct state instruction. Typically, communities start with informal agreements or narrowly scoped joint projects (e.g., joint landfill management or a water pipeline linking localities). These arrangements are then formalised through inter-municipal agreements or by creating joint entities.

Experts emphasise that sustaining partnerships requires an enabling environment, including support for associations of local governments, professional training, and the exchange of experience. Successful cases combine favourable

top-down conditions (clear frameworks and resources) with bottom-up drivers (political will and trust). Where only formal requirements exist without incentives or support, cooperation tends to remain declarative; conversely, clear incentives and flexible legal options foster genuine collaboration (Melichová & Varecha, 2020). Scandinavian countries illustrate this point: despite the relatively large size and fiscal capacity of their municipalities, reducing the sheer necessity of cooperation, national policies encourage voluntary pooling of efforts through subsidies and joint planning. Finland offers a pertinent example, with inter-municipal arrangements coordinating the provision of social and health services.

In contrast, a lack of incentives or the presence of barriers can slow cooperation. A salient example is the United Kingdom, where local governments have historically enjoyed limited autonomy. British municipalities had constrained fiscal powers for many years and were subject to strong central oversight. Legislation did not permit local authorities to introduce new charges or taxes to finance joint projects independently, and significant inter-municipal agreements often required parliamentary approval. Unsurprisingly, inter-municipal cooperation was not widespread. Only in the last decade, through bespoke agreements with central government (the so-called City Deals), have several city-regions (e.g., Manchester, Liverpool) established combined authorities with elected metro-mayors (Morphet & Denham, 2023). However, these bodies remain dependent on public funding and possess more limited competences than many of their continental counterparts. The UK case thus confirms that, without financial autonomy and legislative support, even an objective need for coordination may remain unmet. By contrast, in neighbouring France and Germany, broader local taxation powers and freedom to conclude inter-municipal agreements have historically underpinned various cooperative forms.

Taken together, the principal mechanisms that stimulate cooperation include regulatory instruments (laws on inter-municipal associations, metropolitan statutes), financial tools (subsidies, grants, tax-sharing in favour of metropolitan unions), requirements and incentives embedded in EU programmes, and soft-support measures such as staff training, exchanges of good practice, and trust-building. A combined package of financial and functional incentives is the most effective: cooperation both unlocks new resources and grants additional competences to address shared problems. Under such conditions, inter-municipal associations can progress from one-off projects to long-term, strategic planning for the wider urban region. Evidence across Europe indicates that successful inter-municipal cooperation within metropolitan areas rests primarily on three pillars: (1) a clear legislative mandate; (2) robust financial incentives, including access to state transfers and EU structural funds; and (3) effective horizontal coordination

mechanisms that maintain trust among participating communities. The French *intercommunalités*, Polish metropolitan unions, and German *Verbandsgemeinden* illustrate how a combination of central frameworks and local initiative enables effective coordination of shared infrastructure, transport and socio-economic projects – critically, underpinned by the capacity to support joint decisions with own-source revenues and institutional capability (Bański & Mazurek, 2023; Gustedt *et al*., 2022). Despite model diversity, several lessons appear to be generalisable to other transition countries:

1) the need for a stable legal framework that closes regulatory gaps between primary and intermediate tiers of government,

2) the desirability of introducing "soft" partnership forms – ranging from joint agencies to voluntary agreements – as stepping-stones towards more institutionalised arrangements,

3) the importance of transparent rules for sharing benefits and costs among municipalities to preserve long-term incentives for cooperation. These principles provide an analytical basis for aligning Ukrainian reforms aimed at stimulating regional socio-economic development with ongoing efforts to formalise agglomeration structures.

## 4.4. Ukrainian Experiences of Inter-municipal Cooperation within Metropolitan Areas

The Ukrainian context exhibits several specific features that warrant separate analysis. First, agglomeration processes have advanced in parallel with comprehensive local-government reform, which, since 2014, has fundamentally reshaped the system by creating a new tier of amalgamated territorial communities. Second, the absence of a dedicated statute on metropolitan governance and robust fiscal equalisation mechanisms between local budgets produces a different dynamic of joint projects than in EU member states. Third, the geopolitical and security shocks of the past decade have imposed additional constraints while, simultaneously, stimulating the search for cooperative solutions, particularly in critical infrastructure and services.

Against this background, we focus on the Ukrainian experience by assessing regulatory conditions, financial instruments, and current cases of cooperation. This perspective not only permits comparison with established European models, but also helps delineate plausible development trajectories that take account of the country's institutional and socio-economic specificities. To translate these comparative observations into an analytical frame, we systematise the key parameters of inter-municipal cooperation in five reference countries

(Ukraine, Poland, Germany, France and Spain) in four interrelated dimensions: (1) the legal framework that defines the "rules of the game" within the metropolitan area; (2) the mode of formation that determines the intensity of municipal participation; (3) the revenue architecture that underpins the implementation of joint decisions; and (4) the priority cooperation fields that reflect national and local policy orientations (Table 4.1).

Table 4.1. Key Parameters of Intermunicipal Cooperation within Metropolitan Areas: Analysis of Preconditions in Selected European Countries

| Country | Key legal acts | Establishment (mandatory / voluntary) | Budget framework | Main areas of cooperation |
|---|---|---|---|---|
| Ukraine | Law "On Cooperation of Territorial Communities" (17 June 2014) | Voluntary; no top-down metropolitan structure – large cities may initiate agglomerations with neighbouring municipalities | Contributions from local budgets; state grants allocated on a project basis | Transport, municipal services, planning, construction, and coordination |
| Poland | Act of 9 March 2017 on the Metropolitan Union in the Silesian Voivodeship (GZM) | Voluntary (requires state approval); initiative lies with local governments | 5% of personal-income tax from residents of member municipalities + programmes and EU grants | Public transport, planning, business development |
| Germany | Federal and *Länder* laws on *Zweckverbände* / *Regionalverbände* | Mainly voluntary agreements; in some *Länder* functional unions are compulsory | Membership fees, *Länder* subsidies, EU funds | Infrastructure, business development, regional planning, public services |
| France | Civil Code of Local Authorities (CGCT); Metropolitan Act No. 2010-1563 of 16 Dec 2010, amended by MAPTAM 2014 | Semi-mandatory: municipalities must belong to an EPCI; core cities may create a "metropolis" | Local taxes (property, business activity), state grants | Transport, land-use planning, waste management, economic development |
| Spain | Law 31/2010 on the Barcelona Metropolitan Area (Parliament of Catalonia); all metropolises regulated by autonomy statutes | Voluntary/quasi-mandatory (in Catalonia municipalities are integrated into the AMB roadmap) | Local taxes (e.g., transport surcharge), AMB resources, transfers from the Generalitat and the State | Public transport, planning, development, business development |

Source: the author's analysis based on (Feiertag, 2021; Ofiarska, 2022; Zimmermann, 2017; Tomàs, 2017; Verkhovna Rada of Ukraine, 2014; Verkhovna Rada of Ukraine, 1997).

European practice indicates a direct relationship between the effectiveness of cooperation between municipalities within metropolitan areas and the combination of detailed regulation with fiscal autonomy. In France and Poland, precise

legal provisions and, in specific instances, quasi-mandatory municipal participation are coupled with stable revenue sources (local taxes, shares of personal-income tax), enabling metropolitan unions to plan long-term transport, spatial, and socio-economic projects. German Zweckverbände operate more flexibly: voluntary membership is paired with mixed financing (membership fees, Länder subsidies, and EU funds), allowing cooperation to be tailored to the needs of each urban micro-region. By contrast, in Ukraine, the absence of a dedicated metropolitan statute and reliance on one-off state transfers render cooperation predominantly project-based and fragmented.

Despite the diversity of governance models, integrated public transport, coordinated spatial planning, and the promotion of economic development remain common priorities across all five countries. In some cases – France, for example – these priorities extend into broader domains such as waste management, environmental initiatives, and digital services. For Ukraine, this implies the institutionalisation of metropolitan unions through sustainable fiscal resourcing and an expanded catalogue of shared competences, ranging from core municipal services to innovation-orientated and environmental projects.

Over the past two decades, Ukraine has sought to adopt a modern approach to urban development that has long been standard in the EU. Only recently, owing to local-government reform and external support, have concrete steps materialised. The Lviv metropolitan area has emerged as a pioneer, demonstrating how uniting neighbouring communities around a large city can address common challenges and open new development pathways.

## 4.5. Cooperation within the Lviv Metropolitan Area

Functionally, the Lviv micro-region – consistent with the links depicted in Figure 4.2 – has the potential to serve as a western gateway that integrates the national network of regional centres with European transport and logistics corridors. The figure portrays the spatial network of the Ukrainian metropolitan centres, ranging from the capital and regional centres to agglomeration cities endowed with pronounced integrative functions. Solid and dashed vectors denote the varying intensity of functional inter-linkages, thereby illustrating the basic skeletal framework of the territorial development of the country. Within this hierarchy, Lviv occupies a distinctive strategic position: situated on the western frontier, it forms a dense radial nexus that connects every Ukrainian metropolis to external corridors leading into the European Union. Consequently, the map highlights not only the gradation of urban nodes but also the role of Lviv as a trans-boundary gateway that synchronises national logistics, export flows,

and knowledge-intensive services with the broader EU space, strengthening the resilience and international embeddedness of Ukraine's metropolitan system.

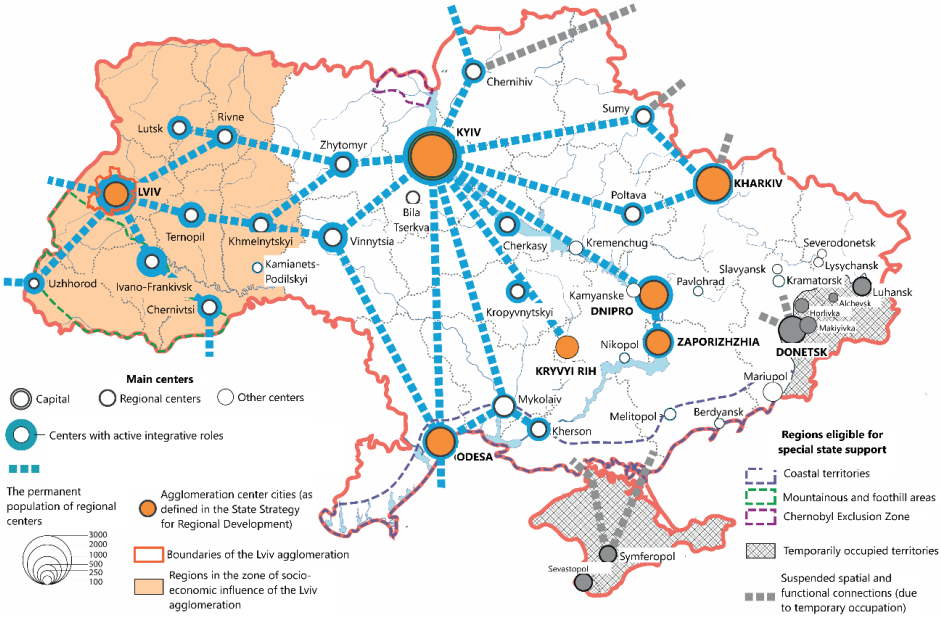


Figure 4.2. Functional Connections and the Role of the Lviv Agglomeration at the National Level
Source: the author's adaptation based on (Lviv Regional State Administration, 2023).

During the period of martial law, this position proved critical: safer border routes through Lviv – relative to central and eastern regions – ensured the continuity of humanitarian goods deliveries, military and technical assistance, and evacuations to the west and onwards to the EU. A dense system of radial connections (depicted in blue) reinforces Lviv's role as a national distribution hub, intercepting and re-routing flows to and from Kyiv, Odesa, Kharkiv and other major centres, thereby compensating for blocked sea and air routes.

In the post-war period, the logistical function of the Lviv micro-region is set to intensify, as the main corridors for reconstruction and export intersect here, channelling material and technical resources to rebuild the eastern and southern regions. The micro-region's socio-economic sphere of influence (shaded orange on the map) encompasses much of western Ukraine, creating a critical mass of consumers and production facilities for the development of logistics, warehousing and processing. The combination of transit potential, proximity to the EU border, and existing infrastructure positions Lviv as a key platform for

integrating the Ukrainian economy into European supply chains, supporting resilient market functioning in periods of both crisis and recovery.

Lviv is the largest economic, educational and cultural centre in western Ukraine, attracting resources and people from the surrounding area. Each day, thousands of residents of neighbouring municipalities commute to Lviv for work, study, or services, creating a single labour market and circular mobility patterns across the region. A 2023 study found that 15% of employed suburban residents work in Lviv and – counting their family members – up to 43% of the population of adjacent communities are directly or indirectly linked to employment in the city. Suburban residents also obtain a wide range of services in Lviv, from healthcare (approximately 39% report using hospitals in the regional centre) to culture (34.5%), education and retail (Kyiv International Institute of Sociology, 2023). These close links bring the metropolitan area together, making the territorial communities of the micro-region increasingly interdependent.

At the same time, several challenges persist: transport infrastructure is overloaded; roads and public transport do not provide reliable, convenient connections between the city and its suburbs; environmental issues (e.g. waste management, air pollution) transcend municipal boundaries; and imbalances in access to services remain due to the concentration of higher-tier services in Lviv. No single suburban municipality can address these challenges alone.

Russia's full-scale war since 2022 has introduced new challenges and, simultaneously, incentives for cooperation. Lviv Region has hosted a large number of internally displaced persons and relocated businesses, requiring coordinated efforts among neighbouring communities to provide housing, employment, and services. Under conditions of military threat, a common security strategy, civil-protection measures, and crisis-response infrastructure have become essential (Voznyak *et al*., 2023). At the same time, the war has fostered solidarity: support for metropolitan cooperation among Lviv Region residents rose from 76% in 2021 to 88% in 2023. In the Kyiv micro-region, which experienced direct military operations, support increased from 45% (2020) to 95%, with everyday hardship serving as the primary driver of day-to-day coordination among neighbouring communities. In the Lviv micro-region, expectations of long-term benefits from cooperation are likely the predominant motive – yet public demand for cooperation is also very high. Consequently, traditional economic drivers are now complemented by security and social-related considerations, pushing territorial communities across Lviv Region towards closer collaboration.

The unprecedented unity in the face of an external threat has substantially increased trust among communities and consolidated an understanding of shared interests. Public-opinion dynamics confirms this shift: a majority of

metropolitan residents (54%) now believe that both Lviv and the surrounding communities benefit equally from cooperation (up from 48% in 2021). In 2023, 44% of residents of neighbouring municipalities agreed that cooperation yields equal benefits to both sides (up from 35% in 2021), and a further 17% believed their communities benefit more than Lviv. These trends indicate an emerging level of solidarity, with residents increasingly perceiving themselves as part of a shared space. In particular, the share of suburban respondents who self-identify as residents of "Great Lviv" rose from 23 to 75% over approximately 18 months (Kyiv International Institute of Sociology, 2023). This points to the gradual consolidation of a metropolitan identity that strengthens social cohesion and resilience – even under wartime conditions.

Joint analyses and sociological surveys identify specific domains in which municipalities within the metropolitan area express the greatest interest in cooperation. Clearly, the metropolitan area already functions as an integrated system. Communities adjacent to Lviv share a common labour market with the city: 15% of employed suburban residents work in Lviv, and – counting family members – up to 43% of neighbouring populations are directly or indirectly connected to employment in the city. A large share of suburban residents regularly travel to Lviv for shopping, healthcare, recreation, and other services: 68% visited the city within the last three months, and one-third did so several times per week. By contrast, only 32% of Lviv residents reported visiting neighboring communities over the same period (Kyiv International Institute of Sociology, 2023).

This asymmetry, dominated by centripetal flows, generates shared challenges: congestion on city approaches, overloaded urban infrastructure, and unequal access to services. A single municipality cannot tackle many issues independently, so local governments must plan jointly at the metropolitan scale. Consequently, community leaders identified priority areas for inter-municipal cooperation, which formed the basis of the Metropolitan Area Strategy. Survey evidence collected for the Strategy shows that residents across the micro-region broadly endorse these priorities: the most frequently cited were the development of transport and municipal infrastructure, environmental management, and improvements to basic services. In particular, respondents in Lviv and the surrounding municipalities emphasised the need for high-quality inter-municipal roads, modern waste-treatment facilities, and an expanded network of medical institutions (hospitals, rehabilitation centres, etc.), all requiring joint and crucially, priority attention. Less frequently cited, but still salient, were: the development of recreational green areas, river and reservoir clean-up, industrial parks to attract investment, expansion of schools and kindergartens, enhance-

ment of public transport, development of sports infrastructure, and joint measures for civil protection (e.g. shelters).

Comparative analysis reveals both convergence and shifts in emphasis between residents' priorities in the Lviv metropolitan area and typical domains of inter-municipal cooperation in European metropolises – namely transport, spatial planning, and economic competitiveness. In both contexts, infrastructure ranks among the top priorities: whereas Lviv residents prioritise inter-municipal roads and a modern waste-management system, cities such as Barcelona, Marseille, and the Ruhr area highlight integrated management of public transport and the road-and-street network (OECD, 2015). These dimensions intersect with environmental concerns (waste, urban greening, water treatment). At the same time, residents of municipalities around Lviv place a clearer emphasis on social and humanitarian functions – expanding healthcare provision (38.8%) and civil-defence infrastructure (21.8%) (Kyiv International Institute of Sociology, 2023) – which are less prominent in more mature and stable European metropolises.

These differences reflect different contexts and stages of institutional evolution. Having largely secured basic services, many European metropolises are shifting cooperation towards strategic, supramunicipal functions such as joint spatial planning and economic development (Lackowska & Zimmermann, 2011), which do not yet feature among Lviv's top-ranked priorities (industrial parks, for instance, attract 25.8% support). By contrast, in the Lviv metropolitan area – developing amid war-related pressures and rapid demographic change – the emphasis is on rapid infrastructure responses (roads, waste, healthcare, shelters) to ensure basic viability and resilience to crisis. The resulting priority mix reflects an early phase of agglomeration cooperation, in which urgent municipal and social needs take precedence over the longer-term strategic functions characteristic of more institutionally consolidated European metropolises.

## 4.6. Limitations and Recommendations for Future Research

Although this comparative inquiry advances the understanding of metropolitan cooperation, several limitations temper the generalisability of its conclusions. First, the empirical base relies exclusively on legislation, official statistics, and pre-existing survey data. The absence of primary interviews or field observation limits access to the informal motivations and negotiation logic that shape inter-municipal choices. Second, because the sample is confined to EU regions, external validity remains restricted; broadening it – particularly to rapidly urbanising areas beyond the EU – would reveal a broader spectrum of institu-

tional pathways. Third, the analysis captures a cross-sectional moment marked by pronounced geopolitical turbulence. In particular, the ongoing repercussions of Russia's full-scale invasion of Ukraine mean that fiscal frameworks, legal mandates, and cooperation priorities may evolve more rapidly than this research design can trace.

To address these limitations, future studies might adopt longitudinal, multi-level designs that track reforms and resource flows over time, integrate primary qualitative techniques (elite interviews, focus groups, participant observation) to illuminate bargaining dynamics, and deploy mixed-methods impact assessments combining geospatial analytics with panel datasets to quantify the effects of specific legal and fiscal instruments on service delivery and territorial cohesion. Extending comparative coverage to metropolitan initiatives in the Western Balkans, the Caucasus, and Latin America would further test the transferability of the three-pillar cooperation model under diverse state capacities and socio-economic contexts, thereby offering practitioners more granular guidance on building resilient metropolitan governance architectures.

## 4.7. Summary and Policy Implications

A comparative analysis of European metropolises confirms that sustainable inter-municipal partnerships rest on three complementary pillars:

- a clear legislative mandate that closes institutional gaps between tiers of government,
- consistent financial incentives – from state subsidies and local tax-sharing to preferential access to EU structural funds,
- horizontal coordination mechanisms that cement trust and enable agglomerations to mobilise and allocate resources for transport, infrastructure, and socio-economic projects.

In the Ukrainian context, metropolitan potential emerges despite incomplete regulatory frameworks and limited fiscal instruments, and security- and society-related factors significantly amplify it. The Lviv metropolitan area demonstrates that cohesion around security and humanitarian challenges raises trust and support for cooperation to unprecedented levels, fostering a new metropolitan identity among residents. At the same time, the absence of a dedicated legal basis and durable fiscal equalisation mechanisms remains a major obstacle to transforming local associations into fully fledged development institutions. Accordingly, the primary recommendation for Ukraine is to institutionalise metropolitan unions through a concise yet comprehensive statute that defines their competences, own-source revenues, and mechanisms for attracting external

finance. The catalogue of shared competencies should be expanded beyond the core infrastructure to include innovative environmental and digital services. Combining European-style financial and functional incentives with strong public demand would create the conditions for a shift from a project-based to a strategic model of metropolitan development, supporting both post-war recovery and the long-term competitiveness of key growth poles.

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Chapter 5

# Stakeholder Competence in the Economic Efficiency of Sustainable Local and Regional Development

Sylwia Kruk, Tomasz Kusio

## 5.1. Introduction

Among the factors influencing regional and local development are the key and concise communication with key stakeholders (Gemünden, Lehner & Kock, 2018), while at the same time the functioning and activity of specific stakeholder groups, such as micro-entrepreneurs, among others (Kusio & Olszówka, 2020), or business in general, which determines this development to the greatest extent. From the perspective of the administration of public organisations, i.e. from the point of view of regional authorities, responsible for regional development, as it were, "ex officio," it is possible to define the so-called Key Success Factors (KSF), or Critical Success Factors (CSF), in the successful implementation of the assumed goals of development strategies (Sa'at *et al*., 2023), among which effective communication and stakeholder involvement are mentioned (Ofori, 2013). The stakeholder's role in the innovation processes is very significant due to the possibility of external knowledge usage, which makes innovation easier and faster for companies despite their size and industry environment. Therefore, both internal and external stakeholder relationships should be managed in order to attract and share knowledge, to achieve both social responsibility goals and sustainable innovation outcomes. The participation of stakeholders makes it possible to seek their views and identify how each of them can contribute to meeting the identified challenges (Boon, Wynen & Callens, 2023) depending on what kind of competencies they possess. Competencies can be described as a combination of the nature of the work and the characteristics of the employee who performs that work (Sandberg, 2000). The components of competencies are knowledge, skills, and attitudes (Mulder, 2007), which apply to a specific person in the workplace. Competencies, thus, should be referred to a particular job, since it is the workplace, through its specific need for a particular set of knowledge, skills,

and attitudes, that formulates the range of competencies required to achieve the goals of the enterprise, or nonprofit, as well as territorial entities. Competencies are considered observable and measurable (Mulder, 2015; Boyatzis, 1982; Catano, 1998). There are research discussions and qualifications according to which it is possible to distinguish competencies according to the extent to which they are related to organisational requirements (Soderquist *et al*., 2010); nevertheless, as far as the real use of competencies is concerned, it takes place only at the moment of performing activities at work.

Thus, it seems difficult to define competencies without reference to work. The issue of competencies is an on-going topic in the literature, given the changing trends in the demand for certain skills, such as those related to open innovation (Podmetina *et al*., 2018). Building competencies is considered a fundamental and key element of economic growth and prosperity (Lagendijk, 2000). This is due to the fact that competencies, which relate to the characteristics and quality of human capital, determine the competitive capabilities in terms of organisation, region, and country. The importance of competencies in the context of innovation is important both in the phase of conceptualisation of innovative solutions, as well as in the phase of implementation of these solutions, which further translates into a development outcome in the context of the aforementioned triad: organisation, region, country. The importance of competence in regional development is not only related to the generation of innovative solutions and their implementation. Within the broader concept of development, it is about managing resources as efficiently as possible. Innovation and entrepreneurship are factors that affect the dynamics of capitalisation processes, among other regional resources. In the development context, in addition to the importance of the human factor wrapped in competence, considerable importance is also attributed to the territorial factor. Since the mid-1980s, the consideration of a territorial unit, such as a region, in the consideration of building wealth and dynamising development has become apparent (Sotarauta, 2003). The region, considered in terms of the concentration of specific industries, specific knowledge and specific specialities, and even specific competencies – under the definition of knowledge (Scott & Storper, 2003) – constitutes in regional studies a territorial unit that determines the dynamics and directions of development. There were and are quite vivid examples of the entitlement to establish a region as a unit of enhanced interest, as special economic zones, regions with dominant smart specialisations, or even regions of knowledge, among others. On the foundation of analogous considerations and noticing regularities in the importance of regionalisation in development concepts, the role and importance of clusters and even micro-clusters have been recognised and defined. Examining the phenomenon of the region, as a territorial

unit, in relation to which it is possible to identify regularities related to development dynamics, has a supply and demand dimension. On the one hand, one can see the creation of ideas for capitalising resources, as well as their accumulation and ordering, which in the dimension of the cluster leads to a high concentration of certain resources, including knowledge. On the other hand, on the demand side, it is important to ensure absorptive capacity (Friedman, 2000).

A significant issue from the above point of view is to diagnose to what extent it is possible to balance, or to correlate as effectively as possible, the competency resources of a region's stakeholders with the possibility of ensuring innovation absorption, that is, the use of these resources in regional development policy. This purpose of the paper can be referred to the competency resources effectivity mismatch (CREM). To achieve the purpose of the work, it will be necessary to answer the following research questions:

- What individuals, groups, organisations – what stakeholders may be involved currently in regional development in general (RQ1)?
- What competency resources are currently relevant to regional development in general (RQ2)?
- Subsequently, it will be important to answer the question of how the economic efficiency of regional development should be considered from the point of view of striving for a balance of development factors (RQ3)?
- Finally, the last research question will be how, in the current turbulent, increasingly globalising socio-economic reality, should regional development be evaluated, precisely from the point of view of the need for sustainability (RQ4)?

The answers to the research questions posed will provide answers in terms of the diagnosed balance between regional resources and the possibility of innovation absorption, a function of which is the competence of regional stakeholders.

Taking into account the objective of the study, which is to perform a theoretical analysis of issues related to stakeholders, their competencies and dependencies, and their impact on effective local and regional development, the following sequence of deliberations was adopted according to the order of the formulated research questions. In the theoretical part, the first subsection analysed the literature in terms of identifying groups of stakeholders in local and regional development. The next subsection analyses the competencies identified for stakeholder groups in relation to the local and regional development prospects. The following subsection addresses issues of economic efficiency in the context of territorial development at the local and regional levels.

Although the issue of efficiency is closely related to the relationship between the level of expenditure and the results of its participation, the principles

of sustainable development are also important. These concepts are increasingly being applied in the preparation of territorial development strategies. Effective planning, but also effective implementation of the plans, means to a large extent achieving the appropriate ecological effect or achieving a surplus of effects over inputs, which should have a long-term perspective and be justified for future generations. The exploitation of existing natural resources and territorial development planning should be carried out effectively but in accordance with the principles of rationality, i.e., with reference to the principles of sustainable development.

The issue of appropriate actions in this area is important from the point of view of planning and implementing development plans by various social and business groups. Considering that it is people who are the creators of developmental changes, the competence to address sustainability in the effective planning and implementation of development objectives seems crucial.

The last subsection of the theoretical part discusses how to assess the level of local and regional development, taking into account and from the perspective of the principles of sustainable development. This refers to the characteristics of one of the elements of competence, i.e., knowledge. The question of the scope of factors for effective local and regional development indicated in this section also indicates the scope of knowledge in this area for stakeholders in this development.

The remaining components are discussion and conclusions, within which considerations based on previous analysis are carried out and discussed. The collection of summarised considerations in the form of conclusions is correlated with the implications of the considerations carried out, and the final section also presents limitations and formulates possible directions for further research, as appropriate to the subject matter of this work.

## 5.2. Literature Review

### 5.2.1. Stakeholders of Local and Regional Development

The origins that apply to the emergence of stakeholder theory date back to the concept that there are individuals, groups, and organisations that are impacted by an organisation's activities or an initiative undertaken by an entity. Stakeholders can influence activities and initiatives that pertain to them or their interests (Mitchell, Agle & Wood, 1997). Although the definition of stakeholders was originally intended to apply to the activities of the entire organisation, the influence of individuals, groups, and collectives of stakeholders has been extended to individual initiatives. Currently, mainly in the context of project

management and with an increasing interest in project activities, the importance of stakeholders in the context of a single more or less complex project initiative has grown. Thus, the concept of stakeholders has evolved, as projects can be implemented by consortia, and therefore stakeholders can also be those entities – individuals who have their attitudes and influence towards the various entities that are part of the consortium.

Stakeholders are defined from an individual and institutional perspective and can be individuals, groups of individuals, organisations, groups of organisations. The significance of stakeholders in the initiatives currently underway is due to their influence on planned or on-going initiatives, as well as their apparent interest in this influence. This is because the interest of some stakeholders may be that a project should take place to the extent intended, while the intention of opponents of an initiative is that the initiative should be limited or even cancelled. From this aspect, the influence, strength of the impact, or attitudes of certain stakeholder groups can determine the implementation or scale of implementation of a particular project.

The stakeholder attitude and influence as variables that characterise stakeholders arise from the competitive principle. Initiatives taken by competitors, groups, or individuals can cause them to increase their competitive position and thus may result in the weakening of the competitive position of others. In a globalising economy or within an increasingly networked framework, it is not complicated to recognise the positive or negative impact that an initiative undertaken by an entity can have on its own business, its own competitive position. The increasing networking is driving interest in monitoring the effect that initiatives taken can have on one's own competitive position. Decision-making issues and specific actions that are expressions of stakeholder intentions have a personal embedding and are carried out by representatives of institutions, organisations, and groups. Stakeholders are also understood as those who co-create networks. They are in possession of knowledge, which they externalise through outreach and internal relations, and in this way knowledge becomes shared. External relations are the forms of relationships between stakeholders, e.g., customers, co-operators, the community, while internal relations are considered to be the provision of knowledge in the form of competence, commitment, motivation, loyalty, education, problem-solving ability (Barczak, 2014). Competence in this case is an attribute of stakeholders closely related to the knowledge they provide for the implementation of a given project. A special type of competence that appears in the context of stakeholders is communication competence, used to build and strengthen relationships.

Among other things, a network can be understood as a single social actor, treated as one of many nodes of various networks of relationships (Cravens & Piercy, 1994), a form of organisation of a given social institution, the distinctive feature of which is the rejection of a hierarchical structure in favour of structures of relationships involving partners, located in a given social network, as well as a peculiar way in which actors interact in a given field of their activity (Czakon, 2012). Among the stakeholders who are involved in the implementation of tasks covered by public-private partnerships are, among others, planners at the level of local public administration units. The role of these stakeholders is indirect; they are not actively involved in the execution of the project covered by the public-private partnership. Stakeholders having an impact on the creation of the municipality's development strategy include: the municipality's board and office, commercial experts, local organisations, supporting experts, authorised government offices, local investment lobbies, involved residents, those involved in consultations, and those associated with the municipality.

During the preparation of the development strategy itself, it is possible to distinguish such stages or goals as the analysis of the current socio-economic status of the municipality, expectations of the municipality's residents, SWOT analysis, vision of the municipality with goals and justification, priorities for the development of the municipality, indication of basic guidelines for all thematic areas under the competence of the competent local government body (Stępniak, 2010). The role of stakeholders in the contemporary aspect of organisational functioning is crucial. Indeed, even their goals and strategies can be redefined, their construction and formulation can appeal to and be based on the needs of stakeholders to a much greater extent (Rostek & Zając, 2018). The importance of stakeholders in the context of organisational planning and operation reflects the long-term context of this planning. Stakeholders can now influence the survival and development of a business entity to a much greater extent than temporary financial success. Stability and the so-called sustainability reflect the actual goal of building the organisation's operating strategy. The financial goal is still key with the guarantee of sustainability provided by stakeholder orientation.

The core of network thinking is the relationship between individuals and society, micro- and macro social structures. What also constitutes the descriptive characteristics of relationships, in the social context, is the reliance of relationships on patterns of social behaviour, which, as one might guess, have their own specificities depending on the conditions of the relationship, as well as the parties undertaking the relationship (Górka, 2016). In the economic context of taking up the topic of networks, the roles played and behavioural patterns, social patterns are less important, while a greater role is assigned to the issue of the results of

the relationship. In this context, the position of the party undertaking the relationship and the object of the relationship being transacted undergo significant changes. Capturing social capital, in turn, accounts for the productivity of relationships, resulting in the capitalisation of social resources, including relationships. The interactions, or linkages, that occur between the various stakeholders can be attributed to both risks and benefits. The attributes of these links are both economic and intellectual in nature. Linkages occur because of just the factors that drive them. The issue of stakeholders is such an important subject that more extensive research has been devoted to it, including (Kozłowska, 2015):

- issues of dependence of activity and stakeholder loyalty on the development and maturity of the organisation,
- issues of the affiliation of rights or the perception of one's own share of rights to the value created with the participation of stakeholders,
- issues of the impact of stakeholder relations on the level of remuneration of the organisation's managers,
- issues of the impact of the formalism of the relationship between stakeholders and the organisation on the level of commitment to that organisation,
- issues of perception of the level of responsibility of the organisation on the level of stakeholder commitment to that organisation,
- issues of the level of stakeholder commitment to the organisation depending on the age of the organisation.

Among the results of stakeholder research, one can mention one according to which the level of stakeholder involvement in affairs for the benefit of the organisation is greater the more advanced the maturity and development of the organisation, that is, the more responsible the organisation is; it is about the action of stakeholders to support the further development of the organisation.

### 5.2.2. Competency Perspectives of Stakeholders vs. Local and Regional Development

Local and regional development is based on bottom-up activities carried out by individual groups, companies, and business leaders, but this development can also have a planned dimension. In terms of planned development, it is usually referred to spatial, economic, and economic planning, with a primary focus on the public good. Local and regional authorities, whose responsibility or intention is to implement the plans indicated in election promises, are responsible for acting in the field of local development. In the first instance, therefore, in the context of planning, it is important to create a strategy in the best possible way and then to implement it effectively. The public administration, as the main entity responsible for regional development, in order to plan and then implement activities for this development, establishes relationships and creates social capital that serves

as a resource for achieving regional development goals. The planning of local or regional development, for which the authorities represented by local government and public administration are competently responsible, also increasingly involves the stakeholders of this development represented by the business sector, science, and society. This representation, in part, is due to the fact that a local government official comes from or represents a particular environment, and also to the fact, as well, that he or she has an electoral background thanks to which he or she was elected to local government. In addition, in public management, great importance is given to public consultation of draft plans for development strategies that affect a region (Martin, 2025). Development strategy planning, in addition to being a product of plans at the regional and central levels (from where, after all, development funding can come), should also take into account the socio-economic characteristics of the region in question. In other words, adequate planning for regional development should presuppose the appropriate use of all the resources available in a region and the resources to which a region may have access. The specific type of resources addressed in this section of the chapter relates to stakeholders and the competencies that they possess.

Competence refers to human resources, and it is also possible to refer to competence resources (Kusio, 2019). The context of regional development, in relation to the discussion of competency resources, is related to the stakeholders of this development and to the models of cooperation between the different sectorial representations that were discussed in the previous section of this chapter (PA-SOC, PA-BUS, BUS-SOC, ACAD-BUS, ACAD-SOC). When studying what factors of economic growth are in relation to regions, still of great importance are those activities that lead not only to the establishment of economic ventures and business, but at the same time to their acceleration (Assudani *et al*., 2017), which in a constantly globalising economy is also related to networking (Spigel, Khalid & Wolfe, 2023). The functioning of combined accelerators, or critical mass, is a result of the greater potential of cooperating business support centres adding value to the effective acceleration of economic activity. From this point of view, it seems that not only competencies related to modern technologies in terms of their assimilation, generation, use, and appropriate application in activities aimed at capitalising on tangible and intangible resources, but also competencies related to relationship interaction and networking are of great importance. The business sector in particular is responsible for regional development, especially small business, which is seen as the most active in creating development activities (Kusio & Olszówka, 2020). What actually matters is the entrepreneurial ability of community leaders, who perceive skilful use of market opportunities, who are able to make effective use of the tangible and intangible regional

resources at their disposal. Supporting the formation of micro-enterprises is the responsibility of local authorities, public administration, who, in addition to financial incentives, can also offer tax incentives, or those of an infrastructural nature (pre-incubation and business incubation). In addition, where possible, science can also provide the knowledge to generate innovative ideas.

When discussing the issues of risk in relation to the financing of innovation activities, it is also important to emphasise the issue of the innovator's own propensity to finance ventures, speaking of self-financing by the person, the innovator or by the company. In the case of academic companies, which are also defined as, among others, spinoffs or spinoffs, there is an indication of a lower propensity for risk-taking on the part of academics; here reference is made to the type of academic enterprises that are founded by university employees. An explanation cited is that employees are already paid a salary, which gives them less impetus to be willing to take risks associated with uncertainty about the invested funds. And willingness to take risks, including financial risks, is itself considered an entrepreneurial trait (Korpysa, 2019). The issue of failure tolerance is important and quite controversial from the perspective of innovation financing (Ochman, 2019). Taking into account the nature of innovation, i.e. experimentation and learning from mistakes, as well as verifying the hypotheses through repetitive processes, funding, on the other hand, is about the effective outcome of activities which should result not in failure but in success, preferably market success. However, given the risks associated with the development of innovative solutions and their implementation, an important role falls on the issue of ensuring stakeholder satisfaction, meeting their objectives, including customers. Significant importance at this point will fall on the science sector, as a provider of knowledge for current and future entrepreneurs in the areas of investing, building markets, or accelerating business by expanding products and markets, not only increasing the absorptive capacity of existing, regional ones, but also those trans-regional ones, which is of great importance in the context of globalisation. Considerable, and it seems that ever-increasing importance should be attributed to ICT-related competencies (O'Connor, 2023), given the increasing importance of digitisation in an increasingly globalising economy. In addition to the need to adequately generate ICT solutions, which, by the way, have a positive impact on networking, based on and CT, one can also find the impact of such a set of competencies on the ability to support the Entrepreneurial Development ecosystem. Van De Ven in 1993 proposed the determinants of this system (1993).

Recently, a popular model is sustainability, or sustainable development, which means, in particular, the ability of an organisation to continuously learn, adapt and develop, revitalise, reconstruct, and reorient (Grudzewski *et al*., 2010).

It is about the responsibility of the organisation in terms of the internal and external environment, while in terms of local, regional development, it is also about maintaining responsibility for present and future development (more on this in the subsection on sustainability). Corporate social responsibility refers to the relationship between the business sector and society (BUS-SOC), especially in the case of mature, developed businesses.

### 5.2.3. The Significance of the Economic Effectivity of Sustainable Development

The concept of efficiency does not refer only to the economic aspect, but to all scenarios where purposeful and organised activities are undertaken aimed at achieving a specific goal. An efficient activity, undertaken in any field, is one that brings long-term and sustainable benefits to the entity conducting the activity (Jaki & Kruk, 2022). Since the essence of agriculture is the pursuit of optimal satisfaction of unlimited needs with limited resources, the aspect of economic efficiency is of interest to the stakeholders of the business entity, whether for profit or not for profit. Efficiency is related to the aspect of rational management. There is a two-way relationship between the concept of efficiency and rational management, because the goal of rational management is economic efficiency; at the same time, guided by the basic principles of rational management, the desired level of economic efficiency is determined. Efficiency is assumed to be one of the paradigms of modern management (Jaki & Kruk, 2022). So, efficiency belongs to one of the most important economic categories. Economic efficiency is associated with the pursuit of maximising the ratio of effects to expenditures incurred and minimising expenditures for given effects.

Efficiency is associated with making optimal choices orientated toward the achievement of goals and with the selection of means and methods for their implementation. It is assumed that efficiency manifests itself in the positive result of the actions taken. The concept of efficiency should be distinguished from that of effectiveness. According to ISO 9000, efficiency shows the relationship between the result achieved and the resources used, while effectiveness illustrates the degree to which planned activities are implemented and planned results are achieved (ISO 9000:2015). Sustainable socio-economic development is one of the most important challenges of the modern world. The concept of sustainable development was initially conceived as a strategy to counteract environmental disasters resulting from excessive commercial exploitation of resources and environmental degradation. The primary goal was to maintain a unique environmental status. This concept has now been broadened and is characterised by exceptional economic and social complexity. An evaluation of financial techniques in many countries has demonstrated that rapid financial growth has

accelerated the development of key issues for sustainable development, encompassing social, economic and environmental sustainability (Hajian & Kashani, 2021).

The concept of sustainable development was developed by the World Commission on Environment and Development and published in April 1987 in the report "Our Common Future", the so-called Brundtland Report. According to the indicated document, sustainable development is a form of development that meets the needs of current generations without diminishing the chances of future generations to meet them (United Nations, 1987). The aspect of sustainable development was included in the Constitution of the Republic of Poland, according to which "the Republic of Poland shall safeguard the independence and inviolability of its territory, ensure freedoms and rights of man and citizen and the security of citizens, guard the national heritage and ensure environmental protection, guided by the principle of sustainable development" (Konstytucja Rzeczypospolitej Polskiej, 1997).

According to the Environmental Protection Law, sustainable development is defined as a form of social and economic progress which, in order to ensure the fulfilment of the fundamental needs of individuals and communities, both of the present and future generations, integrates political, economic and social activities while safeguarding the natural balance and sustainability of essential ecological processes (Ustawa z dnia 27 kwietnia 2001 r.). In September 2015, the 2030 Agenda for Sustainable Development was agreed upon through negotiations between all 193 member states of the United Nations (UN). It announced 17 Sustainable Development Goals (SDGs) and 169 related tasks (ONZ, 2015), which are related to the international commitment to achieve global social, economic and environmental sustainability in the following aspects: people, planet, prosperity, peace, and partnership. The goals are orientated toward ensuring a dignified life for all the world's people, economic progress, and peace while taking care to protect the environment and combat climate change. In a resolution adopted by the General Assembly, it was accepted that sustainable urban development and management is crucial for people's quality of life (ONZ, 2015). In the middle of the designated period, in 2023, progress related to the 169 task mentioned above was deemed insufficient; only 15% of goals are on the track to be achieved, 48% are moderately or significantly off track, and 37% show no progress, indicating stagnation or regression (Fertő & Harangozó, 2025).

Progress in the implementation of Agenda 2030 is measured by sustainable development indicators at the global and regional levels (the so-called SDG indicators) and at the national level (Central Statistical Office). The 2030 Agenda recognises the responsibility of each country at the national, regional

and global levels, taking into account the realities of the country, its development opportunities and respecting the prevailing principles and priorities (ONZ, 2015). Thus, at the national level, the country's own sets of indicators may be used, taking into account the elements most relevant to the country's perspective. At the end of 2020, the New Leipzig Charter and the EU Territorial Agenda 2030 were adopted. The New Leipzig Charter sets the directions for the development of European cities, indicates the principles of good urban governance, and draws attention to the need for transformation towards fair, green, and productive cities. The EU's 2023 Territorial Agenda indicates the actions necessary to ensure good living conditions for all people in Europe (Zakrzewska-Półtorak & Pluta, 2021). The urban aspect is also supported by the European Commission and the proposals included in the European Green Deal. The European Union does not have direct authority over urban policy, but many of the EU's initiatives affect cities. On 14 June 2023, the Council of Ministers adopted a resolution on the National Urban Policy 2030 (Ministerstwo Funduszy i Polityki Regionalnej, 2022) orientated towards the sustainable development of cities and their functional areas. The NPM 2030 coincides with the Strategy for Responsible Development until 2020 (with a 2030 perspective) (Ministerstwo Rozwoju, 2017), which was adopted by the Council of Ministers on February 14, 2017, as well as with the National Strategy of Regional Development 2030 (Ministerstwo Funduszy i Polityki Regionalnej, 2019). It also takes into account the challenges and goals formulated at the international level and included in the Agenda for Sustainable Development (Agenda 2030), the UN's New Urban Agenda, the Urban Agenda for the EU, the Territorial Agenda – 2030 Future for All Areas, and the New Leipzig Charter – Transformative Power of Cities for the Common Good. Identify the following six goals taking into account the long-term development of cities and their functional areas: compact city, green city, productive city, digital city, accessible city, and efficient city. The problem of functional areas applies to both large and smallest cities. The development of cities should take into account cooperation with the environment, i.e. with neighbouring and functionally related municipalities. This development is part of the country's development policy, including the regional policy. Urban areas are systems that are an interacting network of systems. A change in one element of the city's system causes changes (to varying degrees) in other systems of the city. For example, environmental imbalance affects the development of the economy and society, and deterioration of the economy and society negatively affects the environment. In addition, all these elements affect space, as exemplified by suburbanisation. Thus, it becomes necessary to seek a balance in the environment-economy-society system (Zakrzewska-Półtorak & Pluta, 2021). The shape of the city is affected by actions taken at both

the macro- and microscales. This is related to the high level of complexity of the processes that take place, which creates the need for increasingly better identification and coordination. The duty to balance multifaceted development orientated towards strengthening social, economic, and environmental structures rests with the city authorities (Sawras, 2022).

### 5.2.4. Evaluation of Economic Efficiency in Local and Regional Development

The realisation of sustainable development can be made on the basis of factors in the social, economic and environmental areas. The concept of sustainable development refers not only to resources, but also to socio-cultural rights that enable ethnic people to live according to their traditions. Within the framework of sustainable development, an attempt is made to integrate the various levels of human activity (Kinelski *et al.*, 2023):

- moral responsibility of humanity for nature,
- ecological – protection of nature and landscape,
- technical – new technologies and the saving of raw materials,
- economic – taxes, subsidies, and other economic instruments,
- legal – environmental law,
- social-human relations, unemployment,
- political formulation of a sustainable development strategy, its implementation, and control.

The need to fully manage the sustainable development of cities and regions for the whole country is recognised. Cities and regions are characterised by great complexity, so the concept of sustainable development takes on a different dimension here. At the same time, existing measures are insufficient. There is a need for increased awareness of the issue at hand. The measures taken are very often of an ad hoc nature and/or concern only a fragment of the city, when what is needed is a systemic view that takes into account future periods. In urban areas, economic, social, demographic, infrastructural, spatial, environmental, cultural, and other phenomena intermingle and interact with each other. The protection of natural and environmental capital under conditions of adverse changes in spatial processes should be considered a particularly important issue. The environmental aspect is also part of the implementation of the concept of social development (human development).

Environmental protection, in addition to increasing public awareness, is fostered by instruments of state interventionism, hence the need to prepare and enforce appropriate standards. Governance and policy are particularly important in the context of the transition to sustainable development. The root of this is the fact that governance is related to all intentional activities orientated towards

shaping the transformation towards sustainable development, and the related transformations are strongly linked to policy (Patterson *et al*., 2017). Nevertheless, all political efforts directed towards the transition to sustainable development encounter inherent and persistent conflicts, as well as resistance (Patterson, Feola & Kim, 2024). Actions at the national level should be supported by actions at the local and regional levels, taking into account the individual characteristics of the regions of their current neEds It should be added that not all actions can be implemented at the local level, some can only be implemented at the regional level. Several indicators are specified in the regulations on sustainable development. SDG reports for Poland are being developed, but generally no data is available on a local and regional basis. The document Sustainable Development Indicators of Poland 2015, for example, presents 101 sustainable development indicators recommended to measure the country's sustainable development, broken down into social, economic, environmental and institutional-political governance (GUS, 2015). The Strateg system currently lists 214 indicators of sustainable development in the following areas: low-carbon economy, climate change adaptation, risk prevention and management, and environmental protection and resource efficiency (Strateg. System monitorowania rozwoju, 2024). Meanwhile, the report on Poland's regional development for 2021 lists 36 monitoring indicators for the National Strategy of Regional Development 2030, taking into account the main objective "Effective use of endogenous potentials of territories and their specialisations for achieving sustainable national development", and 3 specific objectives: "Increasing the coherence of the country's development in social, economic, environmental, and spatial dimensions", "Strengthening regional competitive advantages" and "Improving the quality of management and implementation of territorially orientated policies" (GUS, 2022). Thus, indicators in the area of sustainable development are presented in a number of different approaches: share of private sector investment outlays in total investment, differentiation of gross value added per employee at the level of regions (NUTS2), differentiation of GDP per capita at the level of sub-regions (NUTS3), ratio of average annual net disposable income per person in a household in rural areas to urban areas and 11 indicators for monitoring the specific objectives orientated to such specific objectives as cohesion, competitiveness, or efficient administration for development (Ministerstwo Funduszy i Polityki Regionalnej, 2019).

Many indicators of sustainable development have been developed so far, but the environmental aspect has not been taken into account sufficiently in them, and it is to it that the other goals should be subordinated, since the long term health of the population and economic development will not be ensured without proper concern for the environment. The publication of 20 indicators prepared by

the Ministry of Climate and Environment in the following categories attempts to respond to these needs: greenery and urban retention, urban heat island, impervious surfaces (concreted) and biodiversity (Ministerstwo Klimatu i Środowiska, 2022). However, it should be noted that from the perspective of sustainability efficiency, it would also make sense to relate these indicators to the expenditures made for their implementation.

It is necessary to change the development model of Polish cities and regions in the direction of pro-environmental activities. Broadly understood development affects the environment and the health of residents, for example, by creating an unfavourable structure of urbanised space and by emitting pollutants from transport. Polish cities are very often confronted with spatial and aesthetic chaos. The concern for urban aesthetics should manifest itself in the concern for its coherence, harmony, functionality, and accessibility. The challenges of spatial order require the concern for consistency in the concern for raising the quality of life between the current state and future needs. Spatial planning should be consistent and coordinated.

Urban areas are highly urbanised, and hence the organisation of a sustainable and coherent urban natural system, which includes both the territory of the city itself and its associated functional areas, is of particular importance. Settlement density, urbanisation, and population concentration translate into environmental changes. Polish cities have a high proportion of impervious areas, including those with concrete river banks. Sealing the surface of cities with concrete and the associated scarcity of greenery increases urban temperatures, thus exacerbating the problem of urban heat islands. The effect of heat island on the urban environment is also increased by air conditioning and the heat emitted by vehicles. The aforementioned sealing affects the rate of rainwater runoff, which on the one hand promotes an increase in flood risk, and on the other hand, due to the lack of water retention with less frequent rainfall, contributes to drought and urban desertification. Warming of the air in urban areas causes more frequent lightning (Raport IMGW-PIB, 2022). At the same time, surface sealing and storm drains are not adapted to heavy rainfall, resulting in local flooding and water pollution.

In urban areas, it is reasonable to increase the proportion of permeable areas, especially biologically active areas. In the context of infrastructure, attention should be paid to the aspect of trees. Urban greenery in the municipal aspect is still not sufficiently appreciated. If it is assumed that infrastructure elements are characterised by longevity, sustainability, non-substitutionality, and generation of external benefits, it should be noted that trees have these characteristics (Raport IMGW-PIB, 2023). Increasing the number of trees will reduce heat, save

energy in surrounding buildings, carry water, absorb pollutants, absorb rainwater, which has a beneficial effect on human health, and will contribute to extending the life of the working population. In addition, the increase in the intensity of life requires the need to create opportunities and an area for the population to rest and regenerate their psychophysical strength. Thus, tree cutting should be followed by plantings with at least the same supply of oxygen as before cutting. Taking into account the above, a comprehensive approach to water management in the areas of cities and their functional areas should be introduced in the context of both drought and flood risk.

Proper care of the natural system is an extremely difficult task in Polish conditions, as negligence has been observed in this area for years, manifested, for example, by chaotic urbanisation, uncontrolled suburbanisation, and concreting with residential construction of existing green areas in urban areas in a way that significantly reduces water retention, increasing the formation of heat islands, development of wind tunnels, etc.

In order to stop urban residents from moving to suburban areas and thus reduce uncontrolled suburbanisation, it is necessary to create urban living conditions that encourage residents to stay in cities. Sustainability is related to the need to consider transport aspects. They should be considered together with other aspects of sustainable development, such as economic, spatial and environmental. The aspect of transportation and the associated increase in automobile traffic and the lengthening of transportation periods affect environmental pollution, among other things. The strong dispersion of development makes it unprofitable to maintain urban transportation, which results in the need to use individual transportation and negatively translates into emissions. Collective public transportation reduces the level of costs and promotes environmental concerns.

The lack of consistency in the shaping of space is very apparent in Poland. A common concept for shaping local and regional landscapes should be created. Spatial planning at the regional level should take into account, among other things, protected areas (Degele, 2023), areas of mineral deposits (Wårell, 2021), areas at risk of flooding (Meng *el at*., 2022), the location of public investments of supra-local importance (Gorzym-Wilkowski & Trykacz, 2022) and elements of the regional settlement network (Räth *et al*., 2023). It is therefore reasonable to prepare a spatial development plan for cities, taking into account their functional areas. The partnership between urban and rural areas should also be strengthened. This should be accompanied by conscious management that takes into account the organisation of green areas. It is reasonable to include vulnerable areas in land use plans with adequate protection to maintain their sustainability and to improve the quality of spaces with unfavourable trends of change. This

is a difficult task that requires knowledge, public awareness, social and political will, and the commitment of local authorities.

The question of the functioning of the urban real estate market is related to the area of sustainable development and urban planning. It would be advisable to first use vacant buildings, adapt and use them, and then supplement existing structures only with new development that is consistent with existing buildings. It is necessary to carry out comprehensive thermal modernisation in existing buildings, which will reduce energy consumption, reduce heat emissions into the atmosphere, and the cost of housing. The functional areas should also prepare land use plans that take into account the preparation of adequate spaces for the construction of suitable roads as cities expand. This preparation will translate, among other things, into a reduction in air pollution in the future resulting from the use of cars by suburban residents. It is also reasonable to prepare areas for the preparation of, for example, bicycle paths, bus lanes, and revitalised sewage networks, since domestic sewage needs to be removed by sanitation trucks, forcing additional transportation. In addition, undertaking new activities in already developed areas should take into account the use of such solutions that will make it easier to enter and leave the city, as traffic congestion that forms causes an increase in air pollution.

## 5.3. Discussion

In the context of regional development, the level of stakeholder involvement should be considered to be very high because of past and future development, as well as the reputational context that this development will provide for individuals, groups, and organisations. A high level of stakeholder involvement can refer to a diverse range of activities, depending on the sector-specific nature of the stakeholders. Among the relatively typical identification of stakeholders, a popular reference is that referring to sectors. Thus, the standard division will be the one that includes public administration, citizens, and business (Sarma & Sunny, 2017), or in a slightly broader description entrepreneurs, policy-makers, technology developers, supplier vendors, marketplace, and stakeholders. In this context, the sectorial representation includes science, business, public administration, and the public. The stakeholders in the development of a given region will be all those who operate in the territory of a given area, region, and who are concerned with the best possible development of the region.

There is currently also an increasing discussion of so-called ecosystems in regional development, in the functioning of which such stakeholders as representatives of universities, governments, investors, and service providers are iden-

tified (Yaribeigi, 2014). Theories of regional development, which are more or less related to the concentration of specific stakeholder resources which, in turn, has an impact on the emergence of conditions for the creation of an ecosystem would not be possible without the existence of interdisciplinary and cooperation between them (Eichelberger, 2020). In addition to the discussion of sufficient preconditions for the functioning of an ecosystem of regional, or local development, which is determined by the representation of the aforementioned sectors, i.e. business, science, public administration, and society, it will be crucial to have the activation and smooth functioning of interactions between these actors. Cross-sector cooperation is even cited as one of the key infrastructure elements for creating smart cities (Pereira *et al*., 2017).

The internal and external relations constitute an instrument of knowledge exchange that can contribute to regional development. The ability to establish, maintain, and develop relationships is the type of competence that applies to individuals and representatives of the scientific, business, and public administration sectors. The interactions, or linkages, that occur between the various stakeholders in science and industry can be attributed to both risks and benefits. The attributes of these links are both economic in nature and intellectual, making them important from the point of view of competence. Linkages occur because of just such factors driving them (Kruss, 2005; Arza, 2010; Dutrenit & Arza, 2010). The specificity of linkages and the need for relationships between sectors such as science and business (ACAD-BUS) is due to the great benefits of innovation and commercialisation, and this linkage should be considered a priority in the context of regional development. In turn, the public administration-business (PA-BUS) link finds expression in the increasing importance of public-private partnerships. Public administration-society relations (PA-SOC) have the dimension of, on the one hand, the performance of public functions by representatives of the public administration, and, on the other hand, the need to obtain the best possible image of them in the context of the electoral process in which the citizens elect the administrators and entrust them with custody and authority over regional resources. In business-society relations (BUS-SOC), in addition to standard producer-consumer relations and employer-employee relations, there is an increasing emphasis on corporate social responsibility (CSR). In each of the relational areas presented, areas for building social capital, there is a role for stakeholders. Within the critical role of relationships in development processes in the local and regional perspective, there are such phenomena as, for example, the development of science and technology parks, which serve as sources of innovative ideas, as well as places for their expansion and development (Etzkowitz & Zhou, 2017), which also attribute the area of competencies for responsibles

and executors. They are, in fact, recognised and confirmed by the view that they are characterised by a high level of cooperation between actors in the physical sense (direct relationships), as well as relationships of a non-direct nature (online meetings and knowledge exchange and ICT-based relationships). In this sense, the cooperation of stakeholders representing science, business and public administration catalyses dynamic development through efficient value generation and competitiveness at the local and supra-local levels (Henriques, Sobreiro & Kimura, 2018).

It should therefore be stated that these are all individuals, groups and institutions that demonstrate a high level of involvement in the initiation and development of relationships within science, business, public administration, and society are potential stakeholders of local and regional development which constitutes the answer to the RQ1. The level of involvement of these individuals, groups, and institutions can be measured by the level of social capital contributed by the relations they initiate and develop. These relationships, which are of key importance from the competencies perspective, are reflected in on-going research on CSR, public-private partnerships, triple-helix, commercialisation, and valorisation principles, among others. An attempt to identify regional stakeholders is the subject of the first research question, but the range of competencies they possess or should possess is the issue for RQ2, although each of the groups should primarily be equipped with relational competencies.

When planning economic activities for a region or locally for a city or municipality, regulating institutional arrangements, endowments of public resources of basic labour, finance, and scientific knowledge, informed consumers that create demand, and proprietary business activities are important (Stam & van de Ven, 2021). In this context, categories such as financial aspects, policy, human capital, markets, and culture can be distinguished and categorised (Aldana, Rodriguez & Ozuna, 2022), including network attributes such as interactions and interconnectedness that are important for EE productivity (Fubah & Moos, 2021). It is necessary to identify the competencies to build and strengthen relationships as previously mentioned, which in relation to regional development have an impact on social capital. Relationship-building skills are a determinant of the ability to create and strengthen links between all stakeholder representations (SOC, BUS, PA, ACAD). In addition to direct communication skills, international communication and electronic communication are currently important, which is applied to foreign language skills and ICT and also to all the stakeholders groups. In addition to communication competencies, entrepreneurial competencies are of great importance especially for the BUS and SOC, as they are crucial for undertaking business initiatives, including, in particular, the establishment of small businesses.

In this context, the competencies related to the skilful acquisition of resources, mainly financial, for the implementation of financial intentions are important. Also important from the point of view of business competitiveness are competencies for acquiring innovative solutions, i.e., those relating to creating them independently or skilfully identifying solutions with high commercialisation potential.

The context of sustainability, which constitutes the framework for consideration in this paper, also indicates the importance of skills related to the evaluation of projects in the dimension of present and future environmental (environment) effects, and, taking into account the broader definition of sustainability, those of a long-term impact on the health and life of communities, citizens. Thus, analytical competence, which allows for the assessment of the present and future effects of implementing business and social solutions in a given region, becomes important. The great importance of analytical competence should be attributed primarily to the public administration (PA) sector, which has a decisive voice in the spatial planning policies of the regions, but also in the planning of social and economic initiatives. All these competencies related to the actors of local and regional development are of great importance and thus refer to the RQ2.

Sustainable urban development is very often considered from the perspective of spatial issues. Spatial order can be considered as spatial management in which the distribution of objects and functions in space will correspond to social and natural conditions and address the satisfaction of social neEds Spatial chaos is the result of aesthetic and functional deterioration of order. It is evidenced by spatial, social and environmental conflicts and deteriorating landscape and architectural values. Its sources should be seen in the uncontrolled proliferation of urban structures resulting from spontaneous and massive suburbanisation, i.e. the de-concentration of the city's spatial structures resulting from the movement of population and economic entities to suburban zones. Uncontrolled suburbanisation can take the form of chaotic urban sprawl and dispersal of development, which are the characteristics of the present planning strategies. Decisions made as part of spatial development have long-lasting effects that are very often difficult to undo and have a severe impact on future generations. Reversing the changes that result from permanent land use is costly, labour intensive, and time-consuming, making planning even more devastating. Poor decisions result in the disfunction of spatial structures and affect the emergence of new development, often chaotic, in suburban areas. This results in new problems related to the efficient and effective management of these areas. It should be noted here that the coverage of small areas by spatial plans and the lack of consideration of needs reduces their effectiveness. This partly addresses the area of demand for competencies of present

planners in terms of abilities to make proper spatial planning in terms of effective spatial management and also in terms of effective resource utilisation.

What is also important the lack of sufficient care for the environment promotes, among other things, faster depletion of psycho-physical forces, increased morbidity and mortality, and reduced fertility rates, which from the perspective of the country's economic development should be evaluated negatively. It also causes losses to government and the economy; including agriculture, forestry, fishing, and tourism. A major problem is urban pollution, which affects not only the health of the population, but also national production and the efficiency of the national economy (El Ghorab & Shalaby, 2016). Taking into account the above, it should be noted that the environmental dimension should be given special priority. The effectiveness of sustainable development in environmental terms should be understood as, for example, a reduction in diseases, mortality, improvement in labour productivity, and an increase in fertility rates resulting from an improvement in the quality of life of the population, with environmental care-orientated activities at the core of this quality. The increase in quality of life is influenced by the state of the environment, the level and quality of medical and social welfare services, the level of public safety, and improvements in the acoustic climate. Climate change poses a threat to the basis for the functioning and life of societies. Areas particularly vulnerable to climate change are cities and their functional areas.

Summarising the considerations related to the essence of economic efficiency of sustainable development (RQ3) in relation to a territorial unit, which in the case of the considerations in this subsection is an urban unit, it can be considered that efficiency can be attributed, among other things, to spatial management. Such a mode of considering efficiency seems to be in line with the principle of rational management of resources, i.e. a given geographic territory, such as a region or a city. Rationality here refers to the most optimal ratio of inputs to results. The results, in the context of sustainable development, should be perceived in the long term, taking into account the social and economic well-being of current and future generations, which now largely depend on the state of the environment, energy resources and natural resources.

Measurement efficiency is related to the need to determine the desired effects and the methods of measuring them. These effects should be related to the expenditures incurred to obtain them. Measures of interest should include, among others, low air quality, traffic congestion, rational management of space, provision of infrastructure taking into account negative environmental impacts, high ambient noise levels, neglect of the built environment, shortage of quiet areas for sports and recreation, air pollution, low-carbon economy, greenhouse

gas emissions, brownfields investments, properly conducted revitalisation, comprehensive thermo-renovation, modernisation of energy infrastructure, use of renewable energy sources and alternative fuels, reduction of irrational use of resources (including construction at the expense of green areas).

Considering the aspect of optimising the management of territorial units and its evaluation (RQ4) in the long term, where the priority is to look at the future-generational results of today's actions, other factors than in standard management of territorial units are prioritised. Environmental values such as attention to the preservation and maintenance of an adequate state of natural resources are gaining importance. National development planning documents contain a strong reference to ensuring environmental protection, and this aspect seems to be strongly embedded in development projects. There are also a number of measurement tools to support planning and monitoring of the state of the environment, but according to the discussions, questions are raised as to whether the level of activities implemented and planned for implementation is sufficient. It seems that there can never be too much environmental action, and there are concerns about whether the ambitiously planned pro-environmental goals exist only on paper.

What certainly poses a problem, and is evident from regional spatial management analyses, is the insufficient level of resources allocated to the development of non-urbanised areas in the face of the huge concentration of resources for further agglomeration development. On the other hand, it is the non-urbanised areas that are characterised by the greatest abundance of natural resources, the protection of which is called for by all stakeholders. In turn, confirmation of the will to commune with the natural environment is the observed and growing migration of residents of large urban centres to the countryside, away from the hustle and bustle of agglomeration.

## 5.4. Conclusions

The main aim of the chapter was to perform a theoretical analysis of issues related to stakeholders, competencies, and effectiveness, and thus to try to find correlations between existing and required competencies and the current demand for such competencies. The main aim refers to the competency resources effectivity mismatch (CREM). In order to achieve the purpose of the work, the research questions have been posed. The first was related to the idenfification of individuals, groups, and organisations (stakeholders involved currently in regional development in general RQ1).

Regions, in the current era of globalisation, but also the ideas and challenges of sustainable development, face increasing urbanisation, which favours developed areas, their immediate neighbourhoods, and, on the other hand, peripheralisation, which in turn affects areas away from urban centres and economic well-being (Kudełko, 2023). Increasing levels of urbanisation are not only a factor in raising the economic standard of residents in urban areas, or their greater access to education and health care, but also the danger of overcrowding, pollution, increased crime, or poverty and unemployment (Barba-Sanchez, Arias-Antúnez & Orozco-Barbosa, 2019). These dangers underscore the need to identify the right groups of stakeholders for prevention. As the literature review reveals still four main groups of stakeholders are of interest: public administration, society, business, and partly scientific actors. Interdependencies between the groups refer to the relations between their representatives, both individual and institutional. In terms of rural development, businesses seem to be the key actors.

Stakeholders face challenging problems that occur when intensified innovation becomes more and more important.

In the era of local, regional and international economic ties, emerging crises, and other threats, the implementation of the concept of sustainable development becomes a particularly difficult task, forcing the need for an interdisciplinary approach. Changes in the social, economic and ecological spheres, especially those associated with climate change and the depletion of natural resources, create the need to continuously monitor the assumptions of the goal of sustainable development. The aspect of sustainable development acquires particular importance in the area of formulating a consistent and optimal local and regional development policy, especially in the context of emerging conflicts. With regard to Polish cities, a clear influx of population to suburban zones is observed, this causes spillover of development into adjacent areas (urban sprawl), which generates a number of problems and reduces the quality of life of residents. Suburban areas are attractive to residents because of the lower cost of buying property and the so-called lifestyle closer to nature. They are also attractive to businesses because of the greater availability of land and its lower price. However, this results in degradation of natural and agricultural areas, a reduction in biodiversity, and a destruction of spatial order. At the same time, the costs of implementing and maintaining technical and transportation infrastructure and broadly defined municipal management, which are financed by local government units, increase. In addition, the development of natural wedges in the wind reduces air circulation and exchange in urban areas, thereby worsening living conditions for residents. The sprawl is encouraged by decisions made by the authorities that are orientated toward meeting immediate needs, without considering long-term

effects. It would therefore be reasonable to prepare a legal framework to regulate the management of functional areas. More compact development generates lower costs, including fewer difficulties in bringing and maintaining roads, connecting to the electricity grid, or water and sewage systems. The less compact the development, the more difficult it is to provide an adequate standard of transportation and service. This addresses the next research question referring to the competency resources that are currently relevant to regional development in general (RQ2). As a result of literature analysis, the most important groups of competencies have been found as those networking and communicative ones. All stakeholders have been found to have the need to attribute them with the advanced set of competencies, especially when digitalisation becomes increasingly important.

The next research question related to the economic efficiency of regional development considered from the point of view of striving for a balance of development factors (RQ3). It should be noted that, in the ecological context, a negative relationship between economic growth and the state of the environment is apparent. Economic growth is accompanied by negative consequences, such as reduced forest and land resources. This is confirmed by studies conducted on the example of Southeast Asian countries, which showed that higher levels of economic growth are accompanied by lower levels of forest land (Woźniak, 2016). Taking the above into account, it would be necessary to take measures that would make it possible to reconcile the realisation of economic growth with concern for the environment, because the construction of natural potential should be treated as a prerequisite for optimal and safe human functioning. Unsustainable urban and regional development negatively affects the health of residents. Problems include pollution emissions, loss of biodiversity and green spaces, heat islands, etc. For example, the number of deaths from cardiovascular diseases, diabetes, malignant neoplasms increased in Poland between 2010 and 2021 (GUS, 2023). From 2003 to 2019, Poland's total greenhouse gas emissions have increased and carbon dioxide emissions from transportation have more than doubled over the same period. During the past 10 years, the increase in average air temperature has a statistically significant positive trend of 0.29˚C (Raport IMGW-PIB, 2023). Since 1851, the air temperature in selected major Polish cities (Gdańsk, Poznań, Warsaw, Wrocław) has increased from 1.4˚C to 2.3˚C. Consequently, facilitating public engagement in environmental protection can contribute to improving societal knowledge and fostering a sense of responsibility for participating in environmental initiatives, as well as to improving environmental performance outcomes (Chen *et al*., 2023).

Finally, the last research question referred to the current turbulent and increasingly globalising socio-economic reality, and the way how regional devel-

opment should be evaluated, precisely from the point of view of the need for sustainability (RQ4). The issue of sustainability is still relevant while the phenomenon of this definition has allowed to develop a very broad interpretation of it. In sustainability, one can find the search for optimisation and identification of balance, and not only in the environmental dimension. In the present work, sustainability was taken into account in the context of demand-supply optimisation in terms of the demand for specific competence resources of local, regional development stakeholders and the possibility of capitalising on regional resources. Within the framework of the considerations also undertaken, the issues of stakeholders in the current socio-economic conditions are discussed, then the competence resources which in the current conditions also seem to be the demand side, while in the next two parts the issues of economic efficiency as such and finally how the issue of economic efficiency can be looked at from the point of view of the currently different perception of local and regional development.

In studying what are the factors of economic growth and relating them to regions, activities still of great importance here are activities that lead not only to the establishment of economic ventures and businesses, but at the same time to their acceleration (Assudani *et al*., 2017), which in constantly globalising economies is also related to networking and networking (Spigel, Khalid & Wolfe, 2023). The operation of combined gas pedals, or critical mass, resulting from the greater potential of cooperating business support centres adds value to the effective acceleration of economic activity. From this point of view, it seems that not only competencies related to modern technologies in terms of their assimilation, generation, use, and appropriate application in activities aimed at capitalising on tangible and intangible resources, but also competencies related to interaction, relations, and networking are of great importance. What is undoubtedly key in scientific discussions and carried out in the context of the importance of cooperation of certain stakeholder groups in local or regional development is the effect of the so-called helix, which took its origins from the business of science and public administration (triple helix), through the inclusion of society (quadruple helix), ending with the classification of the sustainability element (5H) yet (quintable helix), which, however, does not seem to be an appropriate direction to classify this – based on stakeholder sectors – theory. Some authors even state that the systematised representatives of the development helix are only three groups, namely University, Industry, and Government (Cai & Etzkovitz, 2020), which, however, should be debated due to the growing importance of NGOs, which represent society.

The implications for policy and practice are that when considering the role of sustainability in territorial development, it has been determined that even

though this element has not been important before it starts to determine the decision nowadays. This can be related to the human factor, or more precisely, to competencies or competency resources. Given the complexity of territorial development actors, the set of competencies can be related to defined groups of development actors, i.e., stakeholders. In line with the current growing importance of sustainable development, which impacts the formulation of economic efficiency assumptions for development projects, it is essential that knowledge in this area be included in the set of competencies of regional development stakeholders.

The chapter is the result of a literature review and this is the main limitation of the study. For the purposes of better understanding the role of competencies in regional and local development, it would be important to make the empirical research such as the case study or the expanded field research, which is the intention as for the next stage of studying the role competencies.

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# PART II

# SUSTAINABLE CONSUMPTION, AGRI-FOOD SYSTEMS AND SOCIAL INNOVATION

Chapter 6

# Sustainability Assessment in Agri-food Supply Chains: An Overview

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## 6.1. Introduction

In the context of climate change and environmental sustainability, the role of the agri-food sector in contributing to greenhouse gas (GHG) emissions is a critical concern. The global food system accounts for a significant portion of these emissions, making sustainable solutions vital to feeding the growing population within the planetary boundaries. The global food system can contribute to the mitigation and adaptation to climate change by reducing greenhouse gas emissions, minimising food waste, and promoting diets with lower impacts (Kan & Amin, 2024).

The importance of monitoring the overall supply chain sustainably arises from multiple concerns, primarily related to the management of resource scarcity. In the agri-food sector, this is particularly relevant for the management of energy and water resources (Aivazidou, Tsolakis & Iakovou, 2014, Aivazidou *et al*., 2015; El-Batrawy *et al*., 2024; Jerin *et al*., 2024). The use of environmental management information systems, supported by software and databases, can enrich supply chain management with a strong dimension of climate relevance (Barling & Wohlgemuth, 2009). At the same time, the adoption of a life cycle approach helps to consider the supply chain as a holistic system based on the life cycle assessment (LCA) methodology (Ekvall *et al*., 2016; Hoogmartens *et al*., 2014). The LCA is a well-established methodology standardised by ISO (ISO 14040, 2021; ISO 14044, 2021) that supports Sustainable Supply Chain Management (SSCM) (Ali *et al*., 2024). The main advantage of adopting life cycle thinking is the bottom-up approach and the possibility of reconstructing all components of the supply chain (Notarnicola *et al*., 2017; Smith, 2024).

Many authors recommend methods to calculate the carbon footprint throughout the supply chain, as they can help reduce greenhouse gas emis-

sions in a cost-effective manner (Aladaileh *et al.*, 2024). In addition to the LCA--based tool for evaluating sustainability, carbon footprint (CF) is the most widely adopted metric to calculate and measure GHG emissions (Pattara *et al.*, 2017). The primary stage of production (the agricultural phase) is one of the most significant contributors to the CF of the AFSC (Del Borghi *et al.*, 2014; Kan & Amin, 2024). This aspect is closely related to the need to reduce inefficiency (e.g. food loss) during subsequent steps of the supply chain.

The evaluation of carbon emission parameters should be integrated into traditional models within the decision-making process of each organisation (Benjaafar, Li & Daskin, 2013). Awareness of CF can help implement strategies for its reduction, such as improving transportation choices, improving energy efficiency, reducing waste, and adopting sustainable consumption habits at both the local and global levels (Olabiyi, Roth & Henry, 2024). Various methodologies for estimating carbon footprint emissions have been developed in recent years, some of which are applicable to supply chains – for example, methodologies for calculating the carbon footprint of a specific economic sector's supply chain or an organisation's supply chain. However, these approaches are still in the early stages of development and the literature on estimating greenhouse gas emissions in different supply chains remains limited.

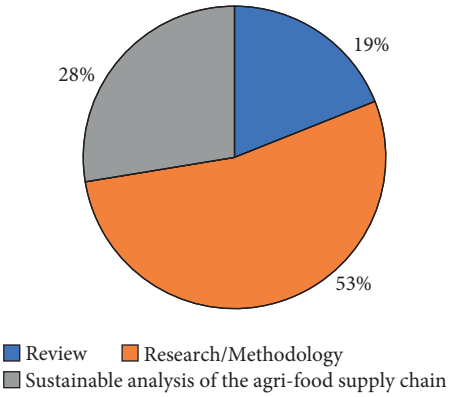


Figure 6.1. Percentages of Types of Papers
Source: our elaboration.

This paper aims to investigate the current literature to highlight methodological issues and approaches adopted in evaluating sustainability along the AFSC. The overview focusses on the role of the CF as a user-friendly instrument to communicate carbon emissions and as a powerful tool to optimise the management of the supply chain. The objective is to propose an overview that can

help practitioners and researchers navigate the literature on methods to assess the sustainability of AFSC, with a particular focus on CF.

## 6.2. Results

### 6.2.1. Review

Cordero (2013) examined the current methodologies and approaches developed to estimate CF in supply chains. In his overview, he mentioned input–output analysis (EIO) and other standardised methods based on LCA (such as ISO standards), highlighting the link between CF reduction and cost optimisation.

Onat and Kucukvar (2020) emphasised the importance of adopting a holistic approach when analysing the CF of the global construction industry supply chain, providing an overview of the period 2009–2020 using the Scopus database.

Ghosh, Jha and Sharma (2020) investigated the relationship between CFP and SSC by reviewing 37 studies. They observed the predominance of environmental impact calculations over the other two pillars of sustainability (economic and social) and asserted the key role of carbon policies.

Olabiyi, Roth and Henry (2024) highlighted the importance of raising awareness of CF by adopting solutions to reduce it along the supply chain. Smith (2024) provided an overview of CF and LCA as key tools in green supply chains.

Kan & Amin (2024) introduced the issue of food security in the sustainability assessment of the agri-food chain by underlining that global food value chains contribute up to 34% of GHG emissions driving climate change.

Goswami *et al.* (2024) conducted a review of household CFs and identified methodological aspects structured around three approaches: statistical, environmental, and economic. They noted that to reduce emissions, it is essential to address data variability at the micro level, such as local environmental contexts, climate, dietary habits, cultural norms, and other socioeconomic conditions.

El-Batrawy *et al.* (2024) examined the issue of climate change risks and carbon management. In their review, they highlighted the components of the CF, the methodologies – particularly tools – and the factors that must be managed to reduce the CF, such as land use, energy consumption, and transportation.

Jerin *et al.* (2024) focused on CF associated with hospital facilities. They emphasised the high variability of data throughout the supply chain, the need to improve the accuracy of the estimation, and the exclusion of critical factors such as the environmental impact of medical equipment manufacturing. Despite these issues, the study highlights energy consumption as the main contributor to CF

and asserts the importance of transitioning from fossil fuels to renewable energy to reduce it.

Okina Solomon *et al*. (2024) explored the role of nanotechnologies in promoting the green supply chain. In particular, the adoption of sustainable nanomaterials is considered a driver for implementing green supply chains with significant potential to improve environmental sustainability.

Anozie *et al*. (2024) conducted a review on the effects of big data in sustainably managing supply chains. They also analysed case studies focussing on key industry players such as Walmart, Nestlé, and Maersk, showing how big data can improve SSC management with tangible benefits.

### 6.2.2. Research or Methodology

Regarding the methodology adopted to assess the sustainability of the supply chain using CF, it is worth noting that Sundarakani *et al*. (2010) proposed long-range Lagrangian and Eulerian transport methods as analytical tools for estimating CF; in particular, they applied analytical and finite difference methods to approximate the three-dimensional infinite footprint model. Among studies based on LCA, an important contribution comes from Bevilacqua *et al*. (2011), who applied LCA to the textile sector to determine the CF of various players involved in the supply chain. This study demonstrates the major contribution of electrical and thermal energy used in the production process and the impact of transportation on climate change. A sensitivity analysis showed that changing the transport mode from air to sea and from road to rail could reduce the carbon footprint by 84% in the transportation phase.

Benjaafar, Li and Daskin (2013) proposed introducing carbon emission parameters into decision-making processes. They showed how CF should modify traditional operational decision-making and how carbon emission information should be considered alongside costs to evaluate the benefits of investing in carbon-reducing technologies.

Crenna, Sozzo and Sala (2018) proposed integrating a biotic resource assessment into the LCA of a supply chain. The study highlights and discusses the critical aspects and paradoxes related to the inclusion of biotic resources in LCA, from system boundary definition to resource characterisation. The paper proposes a renewability-based indicator (NOBRri) to characterise and rank biotic resources based on their renewability rate or regeneration time.

Moran *et al*. (2018) presented the Gridded Global Model of CFs based on data on population, purchasing power, and existing subnational CF studies in the US, China, EU, and Japan. In several hundred cities, they detected a high concentration of global gross domestic product and global CF, which represents

a significant opportunity to focus on these affluent localities and strategies to reduce CF.

He *et al*. (2019) proposed a systematic model of product carbon footprint (PCF) for all activities in the SSC. They applied this methodology at each stage of the SSC of a water and fertiliser irrigation machine, considering the phases of planning, procurement, production, delivery, return, and enablement.

Das, Shaw and Irfan (2020) proposed a multi-product and multi-echelon supply chain network design model addressing CF, water footprint, solid waste, social sustainability, service level, transportation modes and inventories under stochastic conditions. The model is intended to help decision-makers minimise total costs and estimate the flow of materials across the various echelons of the supply chain.

Papanikolaou (2021) examined the leadership of the EU in climate change in the context of the European Green Deal. He described the main international dimensions of the role of EU countries and examined the main aspects of ambitious goals for a sustainable economy and energy transition. From his analysis, crucial issues arise, such as the EU's ability to manage future relationships with the United States and China, which have their own views on how to promote sustainable development and manage international climate negotiations.

Zampou *et al*. (2021) formulated an energy and carbon management system design theory applying a design science research approach that could be applicable to supply chains to promote environmental sustainability. They applied the methodology in four organisations, providing proof-of-value evidence in two rounds of building, demonstration, and evaluation.

Hui (2022) used social networks and the generalised autoregressive conditional heteroskedasticity model to analyse the degree of differentiation of the supply chain network and the correlation between the node enterprises before and after the implementation of the "double carbon" target, using the asset--liability ratio of the enterprises as a predefined risk indicator.

Arcese *et al*. (2023) analysed the application of social LCA (S-LCA) to AFSC and, examining the main aspects of the UNEP guidelines, investigated the connexion between S-LCA and the Sustainable Development Goals.

Guzman Ganto *et al*. (2023) analysed the CF of wood throughout the supply chain, comparing two carbon accounting tools that integrate LCA and building information modelling models. They showed the high variability of the results and underlined the need for harmonisation and transparency, especially for aspects such as biogenic carbon accounting, which require greater clarification (e.g. attribution of carbon credits).

Kanan *et al*. (2023) investigated the automotive parts industry with a conceptual model of integrated ergo-green-lean for the automotive part manufacturing industry. The results demonstrated significant improvements in job satisfaction and a decrease in carbon emissions (over 19%) deriving from energy consumption and material wastage.

Ijaz *et al*. (2024) also investigated this sector. In particular, they analysed the supply chain of the auto parts manufacturing industry in Pakistan using the LCA methodology and the ReCiPe midpoint impact assessment method. They highlighted the need for the adoption of green practices, such as the use of renewable energy, which could produce a benefit of more than 40% in terms of climate change mitigation. Specifically, the use of solar power for electricity generation resulted in a 54% reduction in overall environmental emissions compared to the current state.

Li and Zhu (2023) analysed the coordination mechanism for calculating the overall profit of the supply chain by considering carbon emissions and the demand for green products. They asserted that there is a correlation between carbon trading price and supply chain profit. Indeed, costs arise when the carbon trading price is low, whereas higher prices generate profits.

Aladaileh *et al*. (2024) investigated the impact of lean and green supply chain practices on business process performance and SSC performance. They found that green practices can influence business process performance and indirectly affect SSC performance.

Barbarese *et al*. (2024) analysed the forest supply chain in central Italy (Umbria region) using LCA to quantify $CO_2$ emissions associated with excessive forest administrative procedures under current and future digitalisation scenarios. They detected a considerable reduction in $CO_2$ emissions through digitalisation (almost 50%) with the implementation of the LIFE FOLIAGE project's digital platform. Digitalizing forest administrative procedures can significantly reduce emissions, from 75.07 kg $CO_2$ to 38.14 kg $CO_2$ per procedure.

Yu (2024) investigated the implementation and evaluation of environmental protection measures in the planning of SSC. He analysed a case study of a manufacturing company and asserted the importance of sustainability along the supply chain, not only to help enterprises but also to enhance corporate image and brand value, thereby attracting more environmentally conscious consumers.

Hareem *et al*. (2024) applied LCA to calculate the CF of the C3MR (propane pre-cooled mixed refrigerant process), paying particular attention to reducing specific energy consumption. The study highlights that optimising energy use could positively affect the overall LNG (liquefied natural gas) supply chain.

Indeed, the reduction of 0.2195 kWh/kg LNG allows 8.65% improvement in exergetic performance with lower greenhouse gas (GHG) emissions.

Holzapfel *et al*. (2024) investigated potential solutions to meet the need for primary data along the supply chain for PCF calculation. They proposed the elaboration of an indicator for evaluating the precision of primary data, the "primary data share (PDS)," and applied it to a hypothetical PCF case study of a simplified silicon production process.

Huang (2024) analysed the sustainable aspects of public transportation systems. He provided strategies based on reducing environmental impact (system optimisation for energy saving and CF reduction) and enhancing social and economic benefits (improving passenger satisfaction).

Khang, Ngo and Bui (2024) investigated the cocoa supply chain in Vietnam by adopting LCA to determine the environmental performance of the overall supply chain and identify improvements from a technical and management point of view. They proposed solutions such as the use of renewable energy sources, intercropping practices, composting, activated carbon production, and efficient water utilisation. Furthermore, circular waste and by-product management is identified as an eco-friendly supply chain management solution.

Lake *et al*. (2015) provided theoretical insight and a practical application to support decision-making processes based on an LCA methodology in the steel industry supply chain. They aimed to understand and overcome the dichotomy between the development of the LCA model and the emerging practical implementation, helping to show how operational strategies geared toward environmental sustainability can be communicated using knowledge and information generated from environmental assessments of the supply chain.

Ma *et al*. (2024) analysed the impact of carbon regulations on environmental benefits and examined the development of a low-carbon supply chain, focussing on two aspects: IoT and environmental responsibility. The study shows that the industrial scale of China's low-carbon supply chain economy is expected to exceed 300 billion by 2025.

Mantino and Forcina (2024) analysed the influence of endogenous and exogenous factors on the ability of the territorial agrofood chain to respond to complex transition challenges. The study focusses on tomato processing supply chains in Northern Italy and Extremadura (Spain). Highlights the need for qualitative and quantitative indicators that should be combined in the analysis of governance capabilities and their implications for competitiveness and chain performance.

Hasan *et al*. (2024) elaborated a predictive model of emission factors using a random forest algorithm from machine learning techniques applied to

historical data from the US Environmental Protection Agency regarding "Supply Chain Greenhouse Gas Emission Factors for US Industries and Commodities." They applied the model to supply chains such as electronic manufacturing and food processing and showed the potential effects of reducing CF while enhancing operational efficiency and market competitiveness.

Nikiforov *et al*. (2024) investigated the effective functioning of the green taxation system in the context of the Green Deal implementation by using the Environmental Policy Stiffness Index to assess the impact of environmental policy on the economies of 12 EU countries. They highlighted the need to balance environmental tax revenues with the consumption of natural resources.

Salleh *et al*. (2024) analysed the knowledge and attitudes of rural communities in Malaysia toward sustainable development to determine their challenges and strategies regarding sustainability. The study highlights the lack of infrastructure and the need to improve basic utilities and communication services as the main challenges for rural communities to achieve sustainable development.

Wang (2022) analysed the prospects of the European Green Deal, studying its impact on the leadership of the EU in the climate. He concluded that although it has increased, the climate leadership of the EU faces internal and external pressures that require longer-term planning and effort.

Wang and Yang (2024) developed a solution for supply chain management that includes carbon trading. In particular, they constructed a deep reinforcement learning algorithm for double ordering based on PPO-Lagrangian, aimed at addressing a supply chain management model that integrates carbon trading decisions and ordering decisions. They showed that businesses can optimise business and carbon costs, thus increasing overall profits and adapting to various demand uncertainties.

Yang *et al*. (2024) developed an LCA-based quantitative assessment framework to integrate environmental, economic, and social parameters with best management practices. They applied the model to the supply chain of electrical resistance heating coupled with an innovative steam-enhanced extraction technology (ERH-SEE). The results indicate that ERH-SEE offered better environmental sustainability performance than ERH alone, with a 52.6% reduction in carbon emissions.

### 6.2.3. Analysis of the Sustainability Agri-food Supply Chain

Among the studies focused on the AFSC, Del Borghi *et al*. (2014) conducted an LCA on 13 Italian tomato-based products to identify environmental hotspots and define technical and managerial solutions throughout the supply chain. The study shows that the agricultural phase and the production of packaging

were the life cycle stages with the greatest impact. The adoption of solutions such as the use of organic fertilisers, efficient irrigation systems, reduced packaging weight, and alternative packaging materials could improve the footprint of the supply chain.

Cremaschi (2016) proposed two indicators: the Social Profit indicator and the Technical Inefficiency indicator. The first integrates sustainability performance indicators using prices, while the second relies on distance functions. He applied these indicators to several agri-food chains, including Brazilian soybean meal chains and potato farms in Germany and the Netherlands. Finally, he tested an alternative approach – the Nerlovian Social Profit inequality indicator – on coffee farms in Vietnam.

Garofalo *et al*. (2017) analysed peeled canned tomato production by investigating CF in all stages of the supply chain. They found that waste generated during the processing phase was the main contributor, followed by packaging and cropping. The latter is mainly influenced by mineral fertilisation, particularly nitrogen-based fertilisers.

Pérez-Neira *et al*. (2020) analysed the supply chain of Ecuadorian cacao using the LCA methodology. They estimated that producing 1 kg of dark chocolate results in a CF ranging from 2.04 to 4.66 kg of $CO_2$-equivalent. The contribution of transportation ranges from 8.9% and 51.1%, with cacao/chocolate travelling between 1,380 and 9,155 km-eq.

Ivo de Carvalho *et al*. (2022) defined a standardised mapping of the agri-food sustainable supply chain (AF-SSC) to be included in a performance measurement system. They identified the most critical sustainability-related performance areas (PAs) and the main subcategories for each. As a result, they defined 16 performance areas and 71 subcategories to guide sustainable performance measurement among various stakeholders of AFSC.

Nowaj, Duari and Chakrabarti (2022) used LCA to analyse carbon emissions in the different stages of the Indian oatmeal manufacturing supply chain. They emphasised that although many businesses are unaware of their environmental impact, several companies have adopted innovative practices that are cost-effective and environmentally friendly, thus transforming the conventional supply chain.

Gomez and Grady (2023) investigated the correlation between food supply resilience and environmental impacts in US cities in the context of global food system contributions to greenhouse gas emissions, water use, and nitrogen pollution. They found that the resilience scores for the food supply chain ranged from 0.18 to 0.69 and demonstrated that resilience and sustainability can coexist rather than compete with each other.

Martella *et al*. (2023) analysed the carrying capacity of the tomato supply chain in Southern Italy using the ecological footprint method. They concluded that the industrial tomato supply chain is not sustainable. However, when focussing exclusively on the agricultural phase, they found a positive ecological balance. However, this positive value is largely offset by the logistics phase, particularly transportation.

Arimany-Serrat, Montanyà and Amat (2024) analysed the causal relationship between resilience and sustainability in the management of the agri-food chain. Using a sample of eight Spanish distribution companies, they demonstrated that strong supply chains are closely linked to strategies to improve environmental, social, and governance (ESG) sustainability.

Cricelli *et al*. (2024) examined the use of Industry 4.0 technologies and their implications for sustainability in the AFSC. Based on data from 116 Italian agri-food companies and structural equation modelling with partial least squares, the study shows that adopting Industry 4.0 technologies can help agri-food companies improve human resource management.

Kaur, Juyal and Rathore (2024) compared the CF of organic versus conventional farming, focussing on implications for LCA climate change indicators. Based on a systematic analysis, they concluded that organic farming generally has a lower CF than conventional farming.

Naresh *et al*. (2024) compared 14 treatments involving different tillage techniques, fertilisation methods, and residue management practices for rice and wheat cultivation in western North India to identify strategies to reduce long term energy consumption and carbon emissions. The study highlights that adopting sustainable soil management practices – such as zero tillage combined with straw return – can achieve significant reductions in CF in the overall supply chain.

Rafiee, Abbaspour-Fard and Heidari (2024) conducted a multidimensional sustainability assessment of the bread supply chain in Iran using four LCA methods. They identified hotspots in wheat production and natural gas consumption in bakeries, with energy consumption ranging from 12.07 to 13.93 MJ per kilogramme of bread. They proposed potential strategies to reduce the environmental impact of bread production by prioritising resource efficiency and environmental conservation practices.

Ricciolini *et al*. (2024) assessed the sustainability of the global AFSC in EU countries through a multi-criteria analysis. The study shows that Italy achieved the highest AFSC score, followed by Sweden and Austria. At the sectoral level, the consumption phase presented the greatest challenges, with most countries performing poorly, while the agricultural sector generally performed well, with few exceptions, indicating a fair state of sustainability.

## 6.3. Discussion

Figure 6.2 shows how carbon footprint measurements, hotspot identification, and sustainability strategies are applied to the agri-food supply chain, based on key studies analysed in this overview.


Figure 6.2. Role of Carbon Footprint in Agri-food Supply Chain Sustainability
Source: our elaboration.

### 6.3.1. Research Theories and Methods

Sustainability in AFSC is often conceptualised as a tripartite framework that encompasses economic viability, social equity, and environmental stewardship (Gennari, Rosero-Moncayo & Tubiello, 2019). This holistic approach is reflected in the methodologies employed by recent studies, which aim to balance these three dimensions. For example, Ricciolini *et al.* (2024) developed a sustainability index using Multi-criterion Decision Analysis (MCDA) to evaluate the AFSC in countries of the European Union, integrating economic, social and environmental indicators. Similarly, Breedveld *et al.* (2024) combined Life Cycle Assessment (LCA) with Life Cycle Costing (LCC) and Social LCA (S-LCA) to assess the sustainability of a biorefinery, emphasising the need for a holistic Life Cycle Sustainability Assessment (LCSA). LCA remains a key methodology for quantifying environmental impacts in the AFSC. Rafiee, Abbaspour-Fard and Heidari (2024) employed LCA to evaluate the environmental impacts of bread production in Iran, using four different LCA methods (CML, ReCiPe, CED, and CExD) to provide a comprehensive multidimensional analysis. MCDA has emerged as a valuable tool for integrating multiple sustainability indicators. The MRP-PCI method, performed by Ricciolini *et al.* (2024), allows for the aggregation of 50 indicators in economic, social and environmental dimensions. Furthermore,

several studies have used data-driven methods, including AI and machine learning, to optimise sustainability in the AFSC. Huang (2024) proposed a data-driven approach using AI algorithms (Random Search and Convolutional Neural Networks) to optimise carbon footprint management in global supply chains. Similarly, Wang and Yang (2024) employed Constrained Deep Reinforcement Learning (DRL) to optimise supply chain management under carbon trading constraints. Emerging frameworks integrate LCA with economic and social metrics. This approach aligns with Breedveld *et al.* (2024) and Olabiyi, Roth and Henry (2024), who stressed the need for educational campaigns and policy incentives to drive sustainable consumption.

### 6.3.2. Research Innovations, Limitations and Future Insights

The multidimensional LCA approaches proposed by Rafiee, Abbaspour-Fard and Heidari (2024) and Ricciolini *et al.* (2024) certainly represent an innovation in managing sustainability across the overall AFSC. At the same time, the use of AI-driven optimisation, analysed by Huang (2024) and Wang and Yang (2024), can be considered a powerful tool for reducing carbon emissions and improving supply chain efficiency through the application of AI algorithms. However, Kaur, Juyal and Rathore (2024) emphasise the importance of establishing innovative integrated frameworks. They validated an integrated ergo-green-lean framework in the automobile parts industry, demonstrating significant improvements in productivity, employee well-being, and environmental sustainability. The same approach is followed by Yang *et al.* (2024), who integrated LCA with Best Management Practices (BMPs) to assess the sustainability of groundwater remediation technologies, offering a holistic approach to sustainability assessment.

With regard to research limitations, data constraints are a crucial issue. Some studies face challenges related to data availability and quality. Rafiee, Abbaspour-Fard and Heidari (2024) and Ijaz *et al.* (2024) noted difficulties in accessing reliable environmental data, particularly in developing countries. Similarly, Goswami *et al.* (2024) highlighted insufficient localised emission factors in India, hindering accurate carbon accounting.

Several studies are limited by their regional focus. Gomez and Grady (2023) focused on U.S. cities, while Kan & Amin (2024) analysed the Ukraine-Russia Grain Corridor, limiting the generalisability of their findings to other regions. These studies also prioritise recent crises (e.g., COVID-19, Ukraine war), potentially neglecting long-term structural issues such as soil degradation or water scarcity. Other studies focus primarily on environmental impacts, neglecting socioeconomic dimensions. Olabiyi, Roth and Henry (2024) and Breedveld *et al.*

(2024) advocate for integrating S-LCA to address labour conditions and community welfare.

Regarding research insights, holistic metrics could play an important role in the future. Kaur, Juyal and Rathore (2024) proposed integrating CF with indicators such as soil health and biodiversity to improve sustainability evaluation. Pérez-Neira *et al*. (2020) identified logistics optimisation as a crucial strategy to reduce emissions throughout the supply chain, providing a replicable model to reduce transportation distances, as observed in organic systems. Furthermore, engaging principal stakeholders, such as educating consumers about carbon footprint impacts, could empower sustainable choices and align with broader supply chain transparency initiatives, as suggested by Olabiyi, Roth and Henry (2024). Finally, policy integration is a crucial step to enhance sustainability along the AFSC. Several studies highlight the need for policies that support organic certification, carbon sequestration incentives, and regional market development (Kaur, Juyal & Rathore, 2024; Ricciolini *et al*., 2024).

## 6.4. Conclusions

This review of the literature on the role of the carbon footprint (CF) in a sustainable agri-food supply chain (AFSC) allows us to derive several important considerations for the future development of strategies aimed at achieving sustainable goals in line with the goals of the EU Green Deal. The review highlights the importance of tools and metrics based on the life cycle approach for the calculation of CF, although researchers have also proposed several other multidimensional approaches and methods. However, what emerges is the critical need to integrate this environmental information into the decision-making process, with multicriteria approaches appearing to be the most effective solution for adding value across the overall AFSC.

Most of the research has focused primarily on the environmental impacts of supply chains, with less attention paid to the social and economic aspects of sustainability during the identification of hotspots. Managing the carbon footprint is a key factor in achieving sustainable supply chains, particularly in the agri-food industry, where the agricultural phase strongly influences environmental performance. The adoption of AI, IoT, and digitalisation can support the optimisation and efficient use of energy and material resources while simultaneously reducing CF.

Furthermore, there is a need for improved theoretical frameworks and practical recommendations to conceptualise sustainable supply chains, focussing on the use of different tools and technologies to improve sustainability outcomes.

When combined with appropriate policies and the active participation of key AFSC stakeholders, these strategies can generate cost savings, enhance the value of sustainability, and foster a deeper understanding of CF. They can also promote awareness among companies, communities, and individuals about the concepts of sustainable development and circular economy.

This overview reveals a critical link between sustainable supply chain practices and organisational performance, suggesting that companies must prioritise transformative change to remain both competitive and environmentally sustainable. Integrating circular economy principles into business operations can drive a shift towards sustainable supply chain management, fostering resilience, reducing environmental impacts, and supporting long-term profitability.

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Chapter 7

# Youth Food Purchasing Behaviour: Challenges on Ukraine's Path to Sustainable Food Systems

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## 7.1. Introduction

The contemporary world is confronted with unprecedented challenges that simultaneously affect the environment, the economy, and social systems. The COVID-19 pandemic, the full-scale war in Ukraine, and the so-called triple global crisis – climate change, loss of biodiversity, and environmental pollution, have created a complex context for sustainable development. Under these conditions, the transformation of consumer behaviour has acquired particular importance, as it largely determines the effectiveness of the transition towards a sustainable food system.

At the level of the European Union, the strategic framework is set by the European Green Deal (European Parliament, 2020), which has been further developed through the Farm to Fork Strategy (European Commission, 2020). These policy documents are intended to reduce the negative environmental impact of the agri-food sector, promote the competitiveness of producers', ensure social justice, and improve social well-being. A distinct emphasis is placed on shaping a new model of consumption – one that is more responsible, better informed, and orientated towards health and environmental priorities.

According to the Food and Agriculture Organisation (FAO, 2024), consumer demand constitutes a key driver of the transformation of the agri-food system. The structure of household expenditure in Ukraine indicates a considerable budgetary burden: 77% of total spending is allocated to mandatory payments, food, healthcare, and transport. For comparison, the corresponding figures are 46% in Poland and 51% in Germany. Expenditure on food alone accounts for 34% of the average Ukrainian's budget (Deloitte, 2024).

The younger generation, particularly Generation Z (aged 18–24), is emerging as a decisive group influencing the dynamics of change in the food sector.

A Euromonitor survey 2023 reports that 57% of representatives of the HoReCa sector anticipate significant shifts in consumption patterns due to the growing share of young consumers – changes that are expected to substantially reshape the market over the next five years (Correa, 2024).

Engaging young people in the formation of sustainable food practices is directly linked to the achievement of the United Nations Sustainable Development Goals (SDG 2: Zero Hunger, SDG 12: Responsible Consumption and Production, and SDG 13: Climate Action) (United Nations, 2015, 2023; FAO, 2019; World Health Organization, 2025). Sustainable choices, such as prioritising local products, reducing food waste and opting for environmentally friendly produce, lower the ecological footprint, improve public health and foster the creation of fairer food systems (Poore & Nemecek, 2018).

This study examines the purchasing behaviour of young people in the food market, particularly in the retail sector (including online retail). Today's young consumers are shaping demand, and in the future, they will influence the market as parents, employers, and active citizens. Analysing their dietary habits, preferences, and values in the context of sustainable development enables the identification of effective tools to promote greater environmental, nutritional, and social responsibility among future generations.

The literature review confirms that the behaviour of young people is shaped by a combination of socio-economic, cultural, and marketing factors. For example, Aschemann-Witzel, Varela, and Peschel (2019) highlight the importance of clear labelling and ingredient information within the "trend of »clean label«." Domański (2020) notes the growing importance of brand social responsibility for young buyers. More recent research (Domański, 2023) reveals an adaptation of marketing strategies towards socially responsible and environmentally orientated approaches. Gârdan *et al.* (2025) emphasise the increasing influence of nutritional value, brand values, and packaging design on product choice. Bryła (2020) demonstrates a strong relationship between branding and quality labelling in the organic food market, while Bryła and Domański (2022) explore the role of ethnocentrism and labelling systems in shaping consumer intentions. The volume edited by Gbadamosi (2017) provides a comprehensive account of youth consumption patterns and their responses to marketing stimuli from various stakeholders.

Consequently, research on the purchasing behaviour of young people within the framework of sustainable nutrition constitutes a vital element in understanding the future trajectory of food systems in Ukraine and beyond.

The objective of this study is to examine the factors that influence the behavioural choices of millennials regarding food products, as well as their propensity to adopt a model of conscious consumption.

## 7.2. Research Methodology

Within the framework of this study, the primary focus is on the purchasing behaviour of young people aged between 18 and 24 years. Consumer research was anchored in the local context of the Ukrainian economy.

The empirical component of the study was conducted using a questionnaire survey and employed the CAWI (Computer-Assisted Web Interview) method, implemented through the free Google Workspace tool Google Forms. The survey took place during March–April 2025, with respondent recruitment conducted on a voluntary and unpaid basis. Participation was limited to individuals who expressed willingness to respond to the survey questions.

A total of 260 questionnaire responses were collected. Following data cleaning and validation, 228 questionnaires were retained for further analysis. The sample was formed according to a probabilistic selection criterion. The overwhelming majority of the sample comprised women – 180 respondents (78.9%) while the remaining 48 (21.1%) were men.

To ensure the reliability of between-group comparisons, the size of each subgroup should not fall below the recommended minimum thresholds for probabilistic samples ($n \geq 50–60$ for basic comparisons; $n \geq 100$ for more complex models) (Creswell, 2014). In this study, the number of male respondents was only $n = 42$, which does not meet the recommended minimum and therefore increases the risk of low statistical power (power < 0.70 at $\alpha = 0.05$) and widens the confidence intervals for mean estimates (95% CI = ±0.31 for standardised scores). This limitation could substantially reduce the ability to detect actual between-group effects and increase the likelihood of Type II errors ($\beta$).

By contrast, the subgroup of female respondents was statistically adequate for further analysis ($N = 180$), providing sufficient test power (power ≈ 0.85 at $\alpha = 0.05$) and narrower confidence intervals for mean estimates (95% CI = ±0.14). To avoid biased results, ensure the accuracy of conclusions, and maintain the validity of between-group comparisons, subsequent analyses were therefore focused on the female subgroup. This approach is consistent with sampling methodology guidelines for dealing with disproportionate samples in which one subgroup is too small to support independent statistical analysis (Babbie, 2020).

Considering the data in Table 7.1, the overwhelming majority of respondents are female students (86.1%) with a monthly income of up to 219 euro. As of

April–May 2025, in Ukrainian currency, this corresponds to 10,000 UAH, which exceeds the subsistence minimum by 3.3 times (Minfin, 2025b) and amounts to about 50% of the average monthly salary of an ordinary Ukrainian (Minfin, 2025a).

Table 7.1 presents the profile of the respondent sample included in the subsequent analysis.

Table 7.1. Profile of the Respondent Sample (Female, Aged 18–24 Years)

| Characteristics | Number of respondents *N* | Percentage in the total sample % |
|---|---|---|
| Employment | | |
| Students | 155 | 86.1 |
| Employees | 25 | 13.9 |
| Income (average per month in euro) | | |
| Up to 219 | 88 | 48.9 |
| From 220 to 444 | 50 | 27.8 |
| From 445 to 665 | 27 | 15.0 |
| From 666 to 1,000 | 8 | 4.4 |
| More than 1,000 | 7 | 3.9 |
| Total (*N*) | 180 | 100.0 |

Source: based on our own research.

The developed questionnaire consists of three blocks of questions, in addition to the socio-demographic profile of respondents. These blocks include questions on the subtopics of purchasing habits, consumer preferences, and environmental awareness of the Ukrainian consumer.

A five-point Likert scale was used to measure attitudes, opinions, and perceptions; such gradation helps distinguish fluctuations in opinion from categorical disagreement, which is important for the analysis.

## 7.3. Results and Discussion

### 7.3.1. Purchasing Habits of Ukrainian Youth

Where do young people buy food products? The overwhelming majority of Ukrainians are (86.1%) purchase food products in supermarkets and large retail chains. Regional grocery shops are chosen by 43.9% of respondents, while 36.1% prefer farmers' markets.

According to Deloitte (2024), the consumer sentiment among Ukrainians in 2024 reflected the following trends: 72% of Ukrainians opt for offline formats to purchase food products; the average purchase value increased by 19% in offline

stores and by 18% in online stores compared to the pre-war period. Overall, 37% of Ukrainians increased their spending on food in 2024.

The online channel for purchasing food products has gained popularity in recent years; the COVID-19 pandemic encouraged many consumers to order groceries over the internet. This trend is characteristic of both Ukrainian consumers (Deloitte, 2024) and European consumers (Domański, 2023). According to our survey, 6.7% of respondents purchased food products via retailers' digital apps.

Digital literacy, the benefits of purchasing online and mobile applications, and the ease of access have driven an increase in online spending among young people: the average amount of food purchased among people aged 18 to 27 years rose by 90%, the highest figure across all age groups (Deloitte, 2024).

The main barriers consumers face in transitioning to conscious consumption, as the basis of sustainable food systems, can be understood by examining the motives underlying the choices of food products. The results of the survey indicate that affordable prices, quality, and ingredients/naturalness are the three most important motives for choosing food products (Figure 7.1).

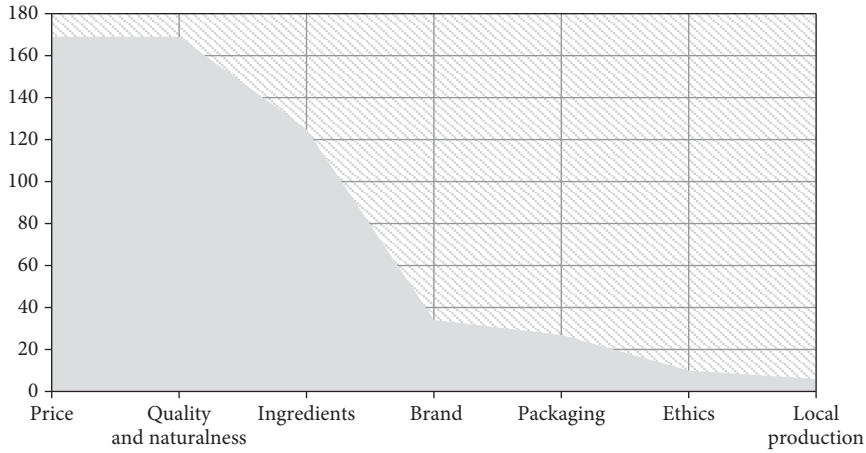


Figure 7.1. Main Criteria for Choosing Food Products (Number of Respondents); Survey *N* = 180 Respondents

Source: own research.

Among the surveyed respondents, the choice is primarily determined by price and quality (Figure 7.1). These criteria are equally important for the 169 survey participants, representing 93.9% of respondents. A significant share of youth – 125 out of 180 respondents (69.4%) – also consider product composition and naturalness, reflecting growing attention to healthy eating and informed choices.

Brand (18.9% of respondents) and packaging design/brightness (15%) are of secondary importance, suggesting a low influence of image-related or visual factors compared to the core characteristics of the product.

At the same time, Deloitte (2024) found that 62% of Ukrainians avoid companies that continue operating in Russia, and for 55% of respondents it is important that businesses support the Armed Forces of Ukraine. On the other hand, some companies that continue to operate in the Russian market attempt to mitigate the negative impact of their presence on their international reputation and distance themselves from direct associations with sponsoring the war. Such corporate strategies have been characterised by Davlikanova, Lylyk, and Savytska (2023) as "warwashing" policies. The term warwashing refers to companies' communication and marketing efforts to whitewash their reputation while continuing to pay taxes to the Russian state budget, which finances military aggression (Davlikanova, Lylyk & Savytska, 2023, p. 5). This behavioural model is particularly common among large producers of mass-market food products, whose brands are highly recognisable and therefore more vulnerable to reputational risks, prompting them to obscure or downplay their continued involvement in the Russian economy. Therefore, brand awareness, its parent company affiliation, and the territory where production takes place still matter for Ukrainian purchasing behaviour.

Criteria related to sustainable development – in particular, production ethics (5.6%) and geographical (local) origin (3.3%) – received the fewest mentions.

This finding confirms the general trend described in the literature (Jaeger, Chheang & Ares, 2023; Markovina *et al*., 2015; van Bussel *et al*., 2022) regarding the relatively low importance of ethical product characteristics that reflect environmental concern, sustainability, and animal welfare in consumer choice. Ethical aspects and the choice of local producers are important factors in sustainable food systems. However, for now, the primary motives for Ukrainians in selecting food products are cost savings and a rational choice focussing on price, quality and the naturalness and safety of the product.

Information search and evaluation is an integrated, multi-level process that encompasses cognitive, emotional, and behavioural aspects of consumer choice. It involves identifying relevant signals (labelling, composition, shelf life, origin, certifications); interpreting and critically evaluating the reliability of these signals; and transforming the information into a practical decision ("buy" or "do not buy").

Trust is a key psychological factor that determines the consumer's willingness to purchase a higher-quality, healthier, or organic product. This requires

market transparency. The potential influence of labelling and packaging information on consumer choice is substantial, as it ensures communication between producer and consumer, building trust, and motivation to change eating habits (Carrillo, Varela & Fiszman, 2012).

In the context of sustainable food systems, the "quality of trust" in packaging information is a systemic criterion for several reasons. Firstly, it serves as an indicator of the "quality of trust" within society. A high level of trust in packaging information means that the food market and regulatory authorities effectively ensure transparency, standardisation, and control. In contrast, low trust signals a structural problem: weak institutions and the absence of effective oversight of labelling integrity, which directly hinders the development of the sustainable products market.

Secondly, it directly influences consumer behaviour models. If the information is perceived as clear and reliable, it becomes a motivator for sustainable choices (e.g., "eco" labelling stimulates the selection of products with lower environmental impact). However, if consumers perceive labelling as manipulative (e.g., greenwashing), apathy or complete disregard of the information may develop, reinforcing inertial and "unsustainable" consumption patterns.

In developed food systems, packaging information serves as a communication channel through which policymakers and businesses promote sustainability standards (carbon footprint, animal welfare, organic production, etc.). If this channel fails (owing to lack of trust or comprehensible formats), the resulting information gap undermines the connexion between producer, regulator, and consumer, wasting efforts to popularise sustainable consumption.

When studying purchasing behaviour in the food market, we pose the question of which packaging information determines young people's choices. The results are shown in Figure 7.2. The main reference points for youth when selecting food products based on packaging information are the product composition (52.8%) and shelf life (28.9%), followed by caloric/nutritional value (19.4%). This indicates a predominant focus on personal health and consumption safety.

Data (Figure 7.2) also show that packaging quality, design, and material are noticeable but not dominant factors in the selection of products for young consumers. Specifically, 17.8% of respondents cited packaging as an aspect they pay attention to. This suggests that for a considerable share of youth, visual appeal, ease of use, and possibly the ecological characteristics of packaging can influence purchase decisions, but for the majority, it is not the main criterion. Young people perceive packaging more as an additional bonus or branding element rather than a primary marker of quality or safety.

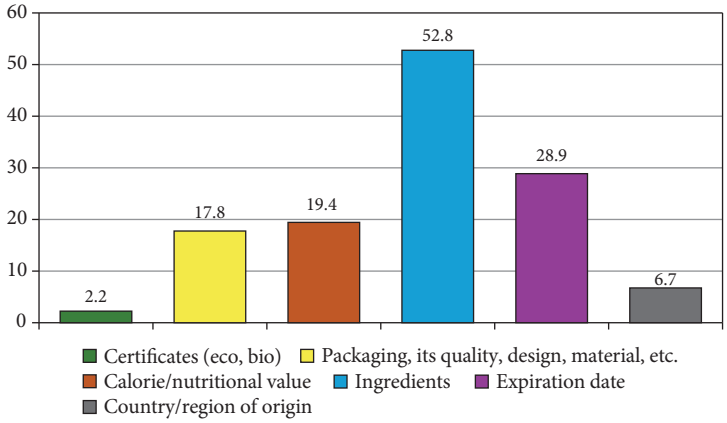


Figure 7.2. Consumer Priorities when Evaluating Information on Food Packaging (%); Survey *N* = 180 Respondents

Source: based on own research.

The country/region-of-origin label is important for 6.7% of respondents, indicating that information about a product's local or imported status is not a widespread "trigger" for purchase. In crisis conditions (economic instability, inflation), consumers focus more on price, shelf life, and universal quality markers rather than geography of origin. Even when origin is stated, it is often not visually highlighted, and consumers may ignore it amidst information overload. Furthermore, Ukrainian youth are accustomed to both local and imported products being present on store shelves simultaneously.

In many European countries, "labelling with »local« or »made in [region]«" is a strong argument for eco-conscious consumers (see, e.g., Bryła & Domański, 2022), but in the Ukrainian youth segment, this effect remains minimal. At the same time, criteria directly reflecting production sustainability have low priority. "Eco" and "bio" certificates attract interest from only 2.2% of respondents. Low awareness and trust in eco-labelling mean that even when certificates are present, most young consumers do not use them as a key reference point. The low proportion of those guided by certificates may also indicate a weak connection between packaging design and trust in the product's environmental friendliness. Overall, this points to insufficient integration of environmental and ethical motivation into the decision-making process when purchasing food among youth, which is a challenge for the development of sustainable food systems.

### 7.3.2. Consumer Preferences and Attitudes towards Sustainable Choices

Consumer preferences are primarily characterised by the frequency of purchasing certain product categories. In selecting categories such as organic

products and alternative sources of protein present in vegetarian/vegan products, the focus was guided by the results of sensory consumer science from the perspective of sustainable development (Aschemann-Witzel *et al.*, 2019; Sautron *et al.*, 2015).

Figure 7.3 presents the survey results regarding the frequency of purchasing: organic, local, vegetarian/vegan products, semi-finished goods, and fast food. The survey indicates a moderate level of interest among young people in sustainable food products, such as organic and local ones. A significant proportion of young people (Figure 7.3) purchase organic and local products frequently – once a week (31.7% and 29.4%, respectively), or occasionally – twice a month (29.3% and 30%, respectively), which together account for about 60% in each product category and can be regarded as a positive sign.

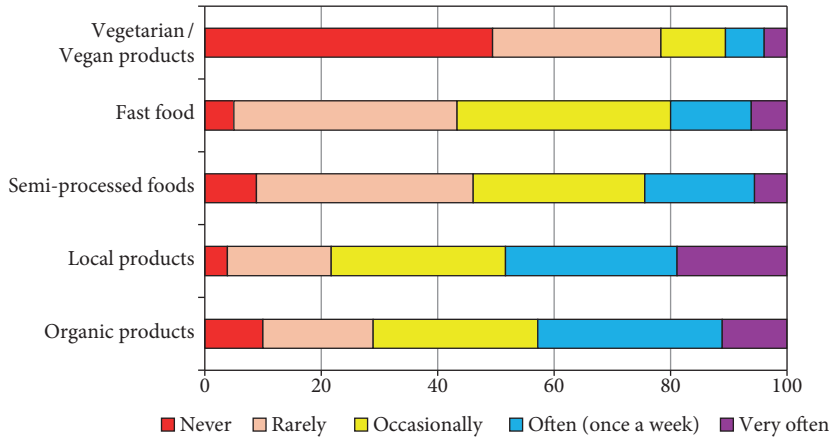


Figure 7.3. Consumer Preference Profile Based on Food Purchase Frequency (%); Survey $N = 180$ Respondents

Source: own research.

Overall, research also confirms that the tendency to choose healthier food is more typical for women (Trieste *et al.*, 2021).

At the same time, regular consumption "very often" of organic products remains at 11.1%. Thus, it is still premature to speak of the sufficient integration of such products into the everyday diet of Ukrainian youth. Of all the product categories studied, respondents most frequently choose locally produced Ukrainian products (18.9%).

Semi-finished goods and fast food demonstrate a high level of consumption, with almost half of young people (about 50% in total) purchase them either occasionally (twice a month) or more frequently (once a week), which indicates the demand for convenience and speed of preparation.

Vegetarian/vegan products are never purchased by the absolute majority (77.3% of respondents), which demonstrates the low popularity of alternative protein sources in the Ukrainian youth segment.

In contrast to these results, globally there is a trend whereby younger and more educated consumers living in urban areas tend to have the most positive attitudes towards, and are most behaviourally engaged in, sustainable products that do not harm the environment, vegetarianism/veganism, and the consumption of organic and vertically farmed products (e.g., Alae-Carew *et al.*, 2022; Beacom, Bogue & Repar, 2021; Giacalone & Jaeger, 2023; Wiśniewska & Czernyszewicz, 2023).

However, our study found that Ukrainian youth mostly prefer traditional Ukrainian cuisine, which historically uses meat (pork, beef, poultry), lard, eggs, dairy, and fermented dairy products. There are also no well-established sustainable dietary patterns characterised by the consumption of alternative proteins. In Ukraine, the production of such products has a higher cost price and, accordingly, a higher retail price. Therefore, ordinary young consumers cannot afford them or do not consider it necessary to purchase them.

When asked "Are you willing to pay more for products produced using sustainable technologies/with environmental care?," almost half said "Are you willing to pay more for products produced using sustainable technologies/with environmental care?" (49.4%) responded that they were willing to do so within reasonable limits, and a further 8.3% – unconditionally. Another 36.1% indicated that their decision depended on the specific product, reflecting a pragmatic approach: the environmental factor is important but not always decisive. A small proportion (5%) are rather unwilling to pay more, and 1.1% completely disregard this criterion.

The overwhelming majority of female were the respondents (83.9%) choose food products primarily based on the criterion of enjoyment from consumption – taste, aroma, and texture. This indicates that emotional and sensory experience is a key driver of choice. The study by Sautron *et al.* (2015) also confirms that respondents value the hedonic experience more than health outcomes or environmental impacts, and consumers are unwilling to sacrifice the former for the latter.

In second place (76.1%) is the ability to meet basic needs (satiety, caloric content), which reflects a pragmatic approach to nutrition. A fairly high proportion (64.4%) value health benefits, which correlates with the trend towards mindful eating, but this criterion ranks below sensory and nutritional attributes. One-third of women pay attention to whether the product aligns with their lifestyle (32.8%) or offers time-saving potential (30%).

When asked "Do you agree that it is important to approach food products consciously, that is, rationally, without harming your health and the environment?," the vast majority of young respondents expressed a positive attitude towards the idea of conscious food choices. Thus, 55% fully agreed with this statement. This means that every second respondent declares support for the principles of sustainable consumption, creating valuable prerequisites for the development of sustainable food systems in Ukraine.

At the same time, there are other positions and values among consumers. A neutral stance among 10.6% of respondents suggests an insufficient understanding of the essence of "conscious choice" or a low personal engagement with environmental and ethical aspects of nutrition.

The survey results also showed that one in three respondents was male. (32.2%) "tend to disagree." This mild disagreement indicates that a person generally does not agree but not completely; they either hesitate, have no clearly formed position, or do not consider it important enough, or they partially agree but have doubts.

Open disagreement was demonstrated by 2.2% of respondents. While not widespread, this shows that a certain proportion of youth see no value in considering sustainable practices when choosing food. A firm, categorical refusal reflects that a person completely rejects the idea that food purchases should be made consciously, considering health in a broad context, including environmental health. This is the position of those who either reject the very concept or operate within an entirely different system of values.

The results obtained require further reflection for subsequent application.

## 7.4. Conclusions

The everyday food practices of the younger generation not only shape current consumption patterns, but also determine the trajectory for the development of sustainable food systems in the future. The results of the study indicate that, currently, the sustainability of production and the environmental friendliness of food products are not decisive factors in the choices of young consumers. Preference is given to price, taste characteristics, and impact on personal health. The aspects related to sustainable production and locality remain peripheral, driven by both limited financial resources and insufficient awareness of the benefits of sustainable consumption.

However, for a transition to a more sustainable consumption model, mere awareness is not sufficient – it is necessary to gain a deeper understanding of

how consumers interpret the concept of "sustainable nutrition," what criteria they prioritise, and what barriers hinder the spread of responsible consumption.

The key barriers to the development of sustainable consumption among youth were identified as high prices as an obstacle to accessing organic products; competition between the purchase of sustainable products (organic and local) and fast food or semi-finished goods; the low popularity of alternative diets, with vegetarianism and veganism remaining outside the focus of most young people; and insufficient environmental motivation.

The analysis of consumer trust in packaging labelling – as a systemic indicator of the maturity of the food market – revealed the weakness of this criterion. A low level of trust in the information on the packaging was found, which may indicate insufficient institutional capacity of the state to verify and control the label. Collectively, these barriers reinforce the dominance of short-term, unsustainable, and convenience-orientated consumption models among Ukrainian youth.

Although the vast majority of respondents declare a positive attitude towards the principles of sustainable nutrition, actual purchasing practices often do not correspond to declared intentions. Even with a positive attitude, a limited budget constrains the shift towards sustainable consumption models, and the presence of neutral or negative positions regarding the need for sustainable consumer behaviour indicates an information gap and the need to clarify the essence of "the "conscious" product choice.

Thus, the absence of stable sustainable consumption patterns demonstrates the need for awareness-raising campaigns and changes in the culture of consumption, which will lead to the transformation of diets and purchasing behaviour patterns.

The initiative to create a sustainable food system has significant economic and social potential. The results of this study can serve as a basis for designing nationwide communication campaigns aimed at promoting sustainable business practices and enhancing consumer trust in the information provided on food packaging. They can also be applied to the integration of relevant topics into university and school curricula through the introduction of specialised courses and lessons that explain the benefits of standardised food labelling and the principles of sustainable consumption. Furthermore, the findings offer a foundation for conducting comparative studies between Ukraine and EU countries, as well as between urban and rural regions, thus contributing to a deeper understanding of the cultural and institutional factors influencing the formation of sustainable consumption patterns among young people.

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Chapter 8

# Packaging as a Tool for Social Integration – Strategies for Designing Packaging Friendly to the Older Adults and People with Disabilities

Agnieszka Kawecka

## 8.1. Introduction

Contemporary societies are increasingly challenged with ensuring accessibility and equality in the daily lives of diverse social groups, particularly older adults and people with disabilities. One of the key yet often underestimated areas affecting their quality of life is product packaging, an element of daily reality that can either facilitate or hinder autonomy.

The significance of this issue is growing in the face of global demographic shifts. Ageing populations require that the consumer environment is adapted to the specific needs of older people, who may experience physical limitations such as reduced muscle strength, visual impairments, motor difficulties, or cognitive decline. Packaging designed with these needs in mind plays a crucial role in maintaining their independence, autonomy, and quality of life.

Equally important is the issue of equity and inclusion. People with disabilities face numerous barriers in their daily access to products, which impact not only their functioning, but also their sense of exclusion. Accessible and user-friendly packaging represents a tangible step toward a more open, fair, and equitable society for all its members.

In addition, packaging with accessibility in mind benefits a wider audience. Features that facilitate the opening, handling, or use of products are valuable not only for people with disabilities but also for children, people with temporary disabilities, and average consumers seeking convenience and intuitive solutions. The concept of universal design demonstrates that accessibility can and should be a standard rather than an exception.

This chapter aims to identify and discuss strategies for designing packaging that is user-friendly for older adults and individuals with disabilities in the context of social inclusion, taking into account accessibility standards and relevant legal regulations, such as Directive (EU) 2019/882 (the European Accessibility Act).

## 8.2. Research Approach and Methodology

The research approach adopted in this paper is multi-stage. To more comprehensively analyse the problem of inclusive design, the following stages were used in the research process:

- review of the literature (scoping review) – map existing research,
- comparative analysis – identifying design strategies in studies,
- interdisciplinary approach – combining perspectives from ergonomics, universal design, law (Directive (EU) 2019/882), and social sciences,
- evidence-based design – using scientific evidence (e.g., empirical studies on drug or food packaging) to formulate design recommendations.

The first part was based primarily on conducting a scoping literature review, aimed at identifying scientific articles published in English between 2000 and the first half of 2025, using the Web of Science and Scopus databases. For thematic selection, an advanced search was first performed on titles, abstracts, and keywords, applying terms related to packaging, older adults, or people with disabilities. The results were then narrowed by keywords such as: *packaging*, *food packaging*, *drug packaging*, *product packaging*, *food labelling*, *product labelling*, *drug usage*, *food*, *beverage*, *beverages*, *drugs*, *ageing*, *older adults*, *elderly*, *aged 60 and over*, *accessibility*, *usability*. Finally, the full texts of the articles were reviewed and are now in this stage. The literature provides only fragmented insights, often resulting from the use of isolated methods or conceptual approaches. However, it does not offer clear guidelines or specify concrete strategies that could be directly implemented by enterprises.

The subsequent section provides a description of selected case studies of packaging solutions that address specific consumer needs. The cases described are only examples because of the lack of current literature. Market practice was not investigated. It is followed by a presentation of legal and normative requirements, as well as industry directives, which are becoming increasingly common in response to the identified demands. Based on these three main pillars, a data synthesis was performed, resulting in a set of recommendations that constitute the final part of the study.

## 8.3. Needs of People with Disabilities and Seniors Regarding Packaging

Designing packaging with an inclusive spirit requires a deep understanding of the real everyday limitations faced by people with disabilities. Their needs are not uniform; they vary greatly depending on the type and degree of disability, but they all share a common denominator: the need to remove barriers to accessing products and information. Packaging, as the first point of contact between consumers and products, is crucial in this context. Disability, as defined by the World Health Organization (ICF, 2002), is a complex interaction between limitations in bodily functions, individual activity, and environmental and social barriers. In the context of packaging, this means recognising how different types of impairments translate into usability difficulties (Poli *et al*., 2023):

- People with mobility impairments often have reduced grip strength, limited precision in hand and finger movements, coordination problems, or joint stiffness. For them, it is important that packaging does not require significant force to open, is stable during manipulation, and can be operated with one hand.
- Blind and visually impaired people need packaging that provides adequate contrast, large, legible fonts, simple, straightforward graphics, and tactile markings. Intuitive opening methods that do not rely solely on visual cues are also crucial for this group.
- People with intellectual or cognitive disabilities may have difficulty interpreting information in packaging – both text and graphics. They need simple language, clear icons, and predictable structure. Avoiding information overload is also crucial.
- Deaf and hard-of-hearing people, although they may not experience any physical barriers when using packaging, may have limited access to information conveyed audibly or expressed in phonetic language. Therefore, visual presentation of messages, instructions, and warnings is extremely important.

Similar needs are also observed among older adults, although their intensity may vary. As people age, there is a gradual decline in motor abilities, particularly in the precision of hand movements, often due to degenerative diseases or other health-related conditions. Additionally, the ageing process is associated with a deterioration in visual acuity and a decrease in hearing capabilities (Świda *et al*., 2019).

The subject matter of the analysed literature mostly focused on topics concerning pharmaceutical usage and dosage (Harben *et al*., 2021). An extensively investigated subject refers to the pharmacological management undertaken by persons affected by visual impairments or vision-related dysfunctions (Connors

*et al*., 2020; Connors *et al*., 2021). Numerous studies focus on pharmaceutical products (Carli Lorenzini & Olsson, 2022). In studies on medication packaging conducted among older people (over 65 years old, with an average participant age of 76.2 years), several barriers to independent use of products were identified. Particular attention was drawn to difficulties in opening packages – such as jars, bottles with screw caps, or blister packs – as well as insufficient graphic contrast on labels, excessively small font size, and the lack of clear, comprehensible usage instructions. The results of the study indicated (Carli Lorenzini, Bell & Olsson, 2022):

- 80% of respondents experienced difficulty opening at least one type of packaging.
- 70% reported problems reading the label – most commonly due to insufficient contrast and small font size.
- More than 60% of participants were unable to independently identify basic information such as the expiration date or directions for use.
- The most significant functional limitations were associated with "twist-off" closures, heat-sealed films lacking tabs, and blister packs.

The respondents expressed a clear preference for packaging that has prominent grips, enlarged typography, and intuitive opening mechanisms, such as the "pull-tab" function.

The results obtained clearly demonstrate the urgent need to implement design solutions that align with ergonomic and accessibility principles, taking into account users' limited grip strength, visual impairments, and reduced manual dexterity. The authors recommend the regulatory adoption of universal design guidelines and emphasise the importance of actively involving target user groups in the testing and evaluation of packaging prototypes. The new methods are being proposed to support the packaging design process, including 2D and 3D User-Centred Design (Hou, 2025), as well as approaches based on the principles of TRIZ (Jeong, Lee & Shin, 2021).

A subsequent study aimed to identify the barriers faced by elderly patients in accessing packaged food and beverages within hospital settings, with a particular focus on their lived experiences. The research focused on the relationship between grip strength and the ability to independently open the packaging, while also collecting subjective evaluations from patients and healthcare personnel on the usability of selected packaging types (Bell *et al*., 2013).

Conducted in four Australian hospitals, the study involved 140 patients aged 65 years and older, along with 64 healthcare professionals. A mixed-methods approach was used, combining quantitative grip strength measurements with interviews and surveys. The findings revealed that a substantial

proportion of patients had difficulty opening at least one type of packaging: milk (52%), juice (52%), cereal packaging (49%), meal accompaniments (46%), bottled water and Tetra Pak cartons (40%). Notably, only in the case of Tetra Pak cartons was a statistically significant relationship observed between grip strength and opening success, suggesting that manual limitations extend beyond physical strength and encompass fine motor control.

The study concludes that the design of standard packaging used in hospital foodservice systems can hinder elderly patients' independence to eat, potentially increasing the risk of malnutrition. The authors advocate for the integration of ergonomic and accessible design principles into food and beverage packaging, particularly in healthcare institutions. An important topic also deepened in literature is the ease of opening, this area is frequently connected with the geometric shape of the packaging and also with the force needed to open the packaging (Bell, Walton & Yoxall, 2017; Stone *et al*., 2019; Świda *et al*., 2019), and also limb disorders were analysed in accessibility of packaging by Hensler, Herren and Marks (2015). Research has also been conducted among older consumers in the context of their packaging experiences (Sudbury-Riley, 2014), particularly in the design of product packaging dedicated to older users (O'Mahony *et al*., 2023). An analysis of the relevant literature reveals several fundamental needs of users with disabilities and older adults in the context of packaging. These needs span both physical and cognitive domains and highlight the importance of inclusive and user-centred design approaches (Poli *et al*., 2023):

- Effortless Opening and Closing: This remains one of the most frequently reported challenges. Packaging should be easy to handle and should not require significant strength or precise motor skills. Design elements that rely on the use of squeezing, twisting or tools should be avoided.
- Ergonomic gripping: Individuals with motor impairments often struggle to hold small, slippery items that lack defined gripping points. Adequate packaging design requires appropriate shape, texture, and material stability to facilitate safe handling.
- Readability of Information: Both textual and graphical content must be easily legible. Key considerations include font size (minimum 12–14 points), strong contrast between text and background, clear and intuitive icons, and avoidance of "visual noise," such as excessive colour or decorative elements.
- Minimalism and Clarity of Message: Especially important for users with cognitive difficulties. Simplicity in visual and verbal communication enhances orientation, reduces stress, and promotes independent use during shopping and product handling.

- Clear Information Hierarchy: Packaging should clearly highlight key information such as product name, expiration date, opening instructions, and health warnings (e.g., allergens). These should be consistently placed in accessible, easy-to-locate areas.
- Physical Safety: The absence of sharp edges, protruding parts, or toxic substances in packaging is critical not only for product quality but also for user comfort and safety.
- Sense of Autonomy and Self-sufficiency: Though less quantifiable, this emotional outcome is central to inclusive design. Packaging that is accessible to people with disabilities empowers them to shop independently, prepare meals or manage personal care, thereby enhancing their sense of agency and dignity.

The needs of consumers, including those with disabilities, as well as individuals experiencing physical or cognitive limitations, should be considered more extensively in the product packaging design process. Importantly, such requirements are by no means in conflict with the expectations of able-bodied consumers. Indeed, there are already documented cases of packaging designed in accordance with the specific needs of these consumer groups.

## 8.4. Designing Packaging for Senior Adults and Users with Disabilities – Case Studies

Both in the marketplace and within academic discourse, there are growing examples of new packaging solutions that feature more user-friendly construction and improved visual design — better tailored to the needs of individuals with higher requirements for comfort and legibility. One of the most problematic packaging types identified is the "peel-to-open" system. The study aimed to investigate whether it is feasible to develop a peelable meat packaging format that would be easier to open for patients with impaired hand function, such as those affected by osteoarthritis or rheumatoid arthritis.

The study involved 100 patients diagnosed with degenerative or inflammatory joint conditions. Each participant attempted to open two types of packaging: a commercially available standard version (Type A) and a technologically modified version (Type B), the conceptual design is illustrated in Figure 8.1. After each test of opening, the participants rated their satisfaction using the Consumer Satisfaction Index (CSI). The average CSI score for the modified packaging reached 68.9%, compared to only 41.9% for the standard version ($p < 0.0001$). The majority of participants 79% expressed a clear preference for the modified

packaging, citing higher satisfaction, while 12% favoured the original version and 9% reported no preference.

The applied structural modifications, increasing the length of the tear tab, adding side indentations to facilitate grip, and optimising sealing parameters, led to a reduction in the required opening force and improved the visibility and graspability of the opening features. These improvements enabled more effective use of the "key grip" and significantly increased user satisfaction among individuals with reduced manual dexterity (Hensler, Herren & Marks, 2015).


Figure 8.1. Representation of Packaging with Enhanced Ease of Opening
Source: own elaboration based on (Hensler, Herren & Marks, 2015).

A technical modification of the "peelable" packaging can significantly improve usability for individuals with limited manual dexterity. Modified products that followed specific design guidelines were shown to be highly accessible – over 95% of patients were able to open them successfully, a result far superior to that of standard packaging. These findings confirm the feasibility of producing accessible packaging, which benefits not only individuals with hand function impairments but also a broader population of consumers.

For consumers with visual impairments, using packaged products often presents considerable challenges, particularly in identifying the product, especially when packages are similar in shape and electronic readers are not accessible. Addressing this need, Procter & Gamble introduced shampoo and conditioner bottles that can be distinguished by visually impaired users through the use of tactile features. This inclusive solution allows users to differentiate products by touch alone. The conceptual basis of this idea is illustrated in Figure 8.2 (Inclusive Design in FMCG Packaging, 2021).

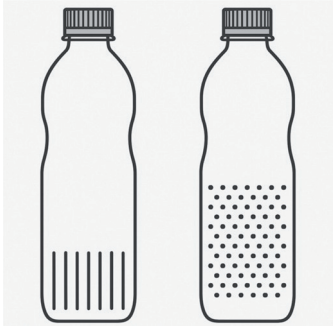

Figure 8.2. Conceptual Illustration of Differentiating Various Products Packaged in Identical-shaped Packaging

Source: own elaboration.

The proposed packaging solutions feature tactile convex elements that enable visually impaired people to recognise the correct product. Tactile elements vary in structure and geometric shape (dots, vertical lines), so despite the standard packaging shape, there is little variation between the packages. This solution improves product safety and significantly eliminates errors. It is important to note that not only the scientific field influences changes in packaging, but also legal and mandatory regulations are introduced, as well as standardisation initiatives and industrial concepts are developed.

## 8.5. Legal Requirements, Standards, and Best Practices for Accessible and Inclusive Packaging Design

Directive (EU) 2019/882 introduces harmonised accessibility requirements for products and services, effective across the EU from 28 June 2025. The main goal of this regulation is to eliminate barriers and facilitate the functioning of the internal market for persons with disabilities and older adults.

In terms of products, the directive specifies several obligations (Directive (EU) 2019/882):

- accessibility-orientated design, covering usable interfaces and functionality that accommodate sensory and motor impairments,
- compatibility with assistive technologies, ensuring that devices can work with supporting hardware and software used by people with disabilities,
- accessible information, labels, instructions, and markings – all of which must be available in at least two sensory modalities (e.g., text and audio or Braille) and formatted in a legible way (e.g., large font, high contrast, appropriate spacing).

Manufacturers, importers, and distributors are required to develop and retain technical documentation, carry out a conformity assessment, issue an EU declaration of conformity, and apply appropriate markings. Market surveillance authorities may enforce these provisions strictly. Although the directive does not regulate packaging as a separate product category, it does impose specific requirements on packaging in its role as an information carrier and interface element. In this context, packaging must (Directive (EU) 2019/882; Lisińska-Kuśnierz, 2014):

- present information that is understandable, legible, and easily accessible to people with various types of disability (visual, hearing, motor, cognitive),
- ensure high visual clarity, including appropriate font size, colour contrast, and a transparent graphic layout,
- communicate information in at least two sensory modalities (e.g., text/icons/images and tactile markings or Braille).

Furthermore, packaging should:

- be easy to open and close without requiring significant force or fine motor skills,
- designed with ergonomics and usability in mind, allowing people with limited motor ability to handle it independently,
- in the case of integrated labels or instructions, ensure compatibility with screen readers, scanners, or mobile applications.

Critical information, such as expiration dates, health warnings, allergen content, and use instructions, must be clearly marked and perceivable by users with sensory limitations. Directive 2019/882 requires manufacturers to ensure that the packaging is not only physically accessible (i.e. easy to grasp and open), but also performs its informational role in accordance with universal design principles, making the product usable for all consumers regardless of their level of ability.

ISO 17480:2015 outlines design requirements for the ease of opening consumer packaging, with particular emphasis on the needs of older adults as well as individuals with reduced manual or sensory capabilities. The primary objective of the standard is to ensure that the packaging is designed to be intuitive, safe, and functional – enabling users to open products independently and without excessive effort. Among the key principles and requirements defined in the document are the following (ISO 17480:2015):

- physical accessibility – packaging must be openable without the use of tools and should require only limited strength and dexterity, taking into account reduced grip strength and hand mobility among older adults,

- visual and tactile cues – the standard requires a clearly marked opening area using legible graphics, text, or raised tactile features that allow users to identify the packaging's function,
- intuitive operation – the packaging design should enable users to easily recognise how to open it, with a predictable mechanism that does not require reading lengthy instructions,
- safety and hygiene – packaging should be easy to open without the risk of injury, and its construction must prevent uncontrolled spillage or splashing of the contents,
- user testing – the standard recommends that the ease of opening be evaluated with real end users, especially older adults (aged 65+), under conditions that closely simulate actual use.


Figure 8.3. Certification Mark of Arthritis Australia
Source: https://arthritisaustralia.com.au/ (accessed: 10.07.2025).

ISO 17480:2015 provides a foundation for designing packaging that is user-friendly for people with limited functional abilities and promotes universal design as a key strategy to create an inclusive market for consumer products. In general, various certification systems have emerged to support this goal. One such example is Arthritis Australia, which runs the Easy to Open (ETO) and Easy to Use (EOU) programmes. These initiatives evaluate the accessibility of packaging and products for people with limited mobility, particularly those living with arthritis and the elderly population. Their aim is to verify the reliability of manufacturer's claims regarding ease of use through objective consumer testing (arthritisaustralia.com.au, accessed: 10.07.2025). Figure 8.3 presents the symbol indicating the certification granted through this programme.

The programs include certification for packaging (Easy to Open) and for products (Ease of Use), both of which are evaluated by individuals living with arthritis. The assessment process is based on both scientific methods and user experiences. A key component of the procedure is consumer testing, which provides real-world feedback on usability and helps identify ergonomic and

sensory barriers. The benefits of certification include (arthritisaustralia.com.au, accessed: 10.07.2025):

- increased consumer confidence through independently verified usability of packaging,
- quicker identification of user-friendly products,
- promotion of inclusive design in collaboration with manufacturers of medical and consumer goods.

The certification process is preceded by research conducted by The Intuitive Design Applied Research Institute, including a testing report and an Initial Scientific Review, which allows for a comparative assessment of packaging accessibility using the ABS (Accessibility Benchmark Scale).

Another noteworthy document highlighting best practices in packaging design is *Creating Accessible Packaging: An Inclusive Design Guide*, developed by the Packaging & Content team at Microsoft. This guide serves as a comprehensive manual that outlines the principles of accessible packaging in accordance with the fundamentals of inclusive design. Its primary objective is to provide practical solutions that enable the creation of packaging suited to a wide spectrum of users – including older adults, people with disabilities, as well as those experiencing temporary or situational functional limitations.

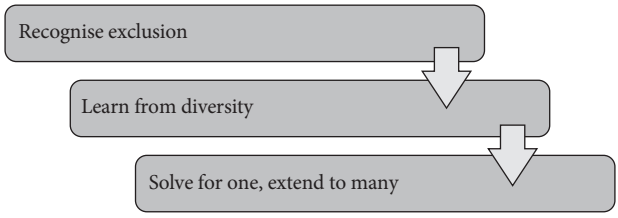


Figure 8.4. Diagram of the Inclusive Packaging Design Process
Source: own elaboration based on (Maisonet *et al.*, 2025).

Microsoft, as the initiator of this guide, adopts an approach grounded in three pillars of inclusive design: recognising exclusion, learning from diversity, and designing solutions that, while responding to the needs of the individual, have the potential to benefit a much broader audience. This approach is illustrated in Figure 8.4.

The document presents nine key principles that should guide the packaging design process: structural simplicity, intuitive opening features, thoughtful material selection, easy access without the need for force or tools, ergonomic shape and stability, minimising the number of actions required to open the package, and eliminating sensory and informational barriers. Special emphasis is placed

on the physical details of the packaging – such as raised tabs, loops, handles, or cutouts – which facilitate gripping and manipulation without requiring significant manual strength. The document also highlights the role of tactile elements, textures, pictograms, and the potential to extend information through QR codes and digital content (Maisonet *et al*., 2025).

The latter part of the guide outlines an accessibility evaluation system based on a five-level maturity model. This model includes criteria such as the legibility of labels, elimination of the need for tools, accessibility for people with visual and mobility impairments, and consideration of multiple opening methods. The guide also emphasises the importance of testing prototypes with users representing diverse functional groups.

The authors encourage designers and manufacturers to integrate accessibility as a core element of the design process, rather than as an additional element in the final stages of product development. According to the guide, designing accessible packaging is not only a socially responsible approach but also a rational strategy from the standpoint of innovation, product quality, and user experience. The document should not be viewed as a closed set of instructions, but rather as an open invitation to collaboratively advance design practices toward greater accessibility (Maisonet *et al*., 2025).

The guide provides a wide range of concrete recommendations on which solutions are more user-friendly for individuals with various functional limitations. It also includes a checklist that highlights the most common design mistakes. In relation to users with partial or complete visual impairments, the guide emphasises the importance of adequate text and graphic contrast (minimum 3:1), the use of tactile elements (such as raised surfaces or Braille) and avoiding the use of colour as the sole means of conveying information. For individuals with cognitive difficulties, the use of clear and plain language free of technical jargon is recommended.

For users with limited manual dexterity, the guide outlines several mechanical facilitations, including minimising the force required to open the package, ensuring the possibility of opening with one hand and eliminating the need for squeezing, twisting or grasping motions. Packaging should feature a clearly identifiable point of entry and instructions for accessing additional information in digital formats. For heavier products (more than 2 kg), it is essential that the packaging allows for a two-handed grip. In addition, the guide highlights the importance of incorporating tactile and easily graspable opening features, such as tear strips with a free end and a textured surface for better grip. This checklist serves as a practical tool to support universal design and enhance packaging accessibility for a broad and diverse user base (Maisonet *et al*., 2025).

## 8.6. Inclusive Design Strategies

In the context of the growing importance of accessibility and inclusivity in the design of consumer products, companies today face the challenge of adapting packaging to meet the needs of increasingly diverse users. Considering limitations related to age, motor function, sensory perception, or cognition, is not only a matter of social responsibility, but also a strategic move that enhances market competitiveness. The following section presents recommended strategies that companies can implement to ensure that their packaging better serves individuals with various functional limitations, supporting their independence and user comfort:

1. Implementation of Universal Design as a Standard – companies should adopt universal design principles as the foundation for packaging development. This approach entails designing for the broadest possible user base, regardless of age, physical ability, or sensory capability. Instead of developing separate solutions for different groups, inclusive designs should be created that are functional and understandable for everyone.

2. Use of Ergonomic and Intuitive Opening Mechanisms – packaging should be easy to open without requiring significant force, squeezing, twisting, or using both hands. Features such as pull-tabs, larger flaps, and textured grips enhance usability. It is also essential to accommodate one-handed operation.

3. Enhancing the Readability and Accessibility of Information – packaging information must be clear and comprehensible for users with limited vision, cognitive difficulties, or hearing impairments. This includes using large fonts (minimum 12–14 pt), high contrast, clear pictograms, and avoiding information overload. Content should be communicated in at least two modalities (e.g., text and pictogram, or text and Braille).

4. Incorporating Tactile Markings and Braille Labels – to assist blind and visually impaired users, it is recommended to include raised markers, clearly defined entry points, and key information in Braille. In addition, relying solely on colour to convey information should be avoided, as it excludes colour-blind individuals. The example of packaging, bottles with tactile elements presented in Section 2, refers to the presented strategy.

5. Prototyping and User Testing with End Users – packaging should be tested with real users, including older adults, blind individuals, and those with arthritis. Only through empirical usability testing can the actual accessibility of a product be properly assessed.

6. Using Certification Systems and Best Practices – external certification programmes, such as Easy to Open or Ease of Use (e.g., Arthritis Australia), can validate the accessibility of packaging. Companies should also refer to established

standards such as ISO 17480:2015 and industry guidelines such as the *Microsoft Inclusive Design Guide*.

7. Expanding Packaging Functionality with Digital Access – packaging can include QR codes or other access points to extended digital content (e.g., instructions, warnings, descriptions), which is particularly important for people who struggle with printed material.

8. Involving Interdisciplinary Design Teams – the development of accessible packaging should be a multi-stage process that involves specialists in ergonomics, digital accessibility, graphic design, and representatives of the target user groups.

Implementing the above strategies will enable companies to create products that not only comply with legal and regulatory requirements (e.g., EU directives) but also respond to the real needs of socially diverse consumers, fostering loyalty, trust, and a sense of dignity.

## 8.7. Summary

The significance of packaging as a tool for promoting social inclusion, particularly in addressing the needs of older adults and individuals with disabilities, represents one of the key challenges facing contemporary packaging design. Traditional approaches often overlook limitations related to age, motor impairment, and sensory or cognitive difficulties, which in practice can lead to the exclusion of users from everyday access to products. In the context of an ageing population and growing awareness of the rights of persons with disabilities, packaging takes on a role that goes beyond its technical function; it becomes a carrier of social values such as equality, independence, and dignity.

The main functional, sensory, and informational barriers associated with the use of modern packaging should be outlined, and directions for design should be proposed that align with the principles of universal accessibility. Numerous examples of best practices, standards, and industry initiatives (e.g., ISO 17480: 2015, Easy to Open) are presented as potential reference points for manufacturers. The need for user-centred prototyping and the implementation of inclusive design strategies is also emphasised. The proposed strategies represent a theoretical framework and therefore require empirical validation. The planned research will include qualitative and quantitative approaches, such as eye-tracking studies and experimental testing of modified packaging versions, to confirm the applicability of the suggested strategies. Furthermore, the limitations of applying inclusive design methods should also be examined, particularly to ensure that solutions dedicated to individuals with disabilities or functional limitations do

not inadvertently create difficulties or negative perceptions among able-bodied consumers. The implementation of such solutions should also be preceded by appropriate communication with consumers. In conclusion, accessibility to packaging not only improves the quality of life of individuals with functional limitations, but also contributes to market advantages and reputational benefits for companies that integrate social responsibility into their design processes.

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Chapter 9

# First Impressions Count: How Visual Design in YouTube Thumbnails Influences User Engagement

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## 9.1. Introduction

In January 2025, each YouTube video is granted the same amount of space on a user's screen while browsing. The videos vary in their key aspects such as lengths, workload put into each of them, subject, and purpose. The service allows creating and uploading a custom thumbnail, a small, clickable, attention-grabbing image, which along with the title allows for videos to stand out.

User testing is a valuable tool in research and marketing. However, the dynamic YouTube environment limits options for proper user-testing before release. This may favour different practices: fad-chasing, "click-baiting," and copying isolated successful cases.

The resulting environment is a product of market forces, unclear set of rules, determined by an algorithm and limited knowledge. On one hand we have producers, content creators, exercising their agency on the shape of the available content, and on the other hand we have the users, exercising their agency by picking the media they wish to consume. Their decision then is often based on the limited information about the product available to them.

Content creators have the incentive to influence user behaviour. Some of them admit their practices of manipulating their product to be better at capturing attention of a scrolling user. Some anecdotal testimonies of content creators suggest that the subscription feature is not the main way of their videos amassing views. The supposed trend of users favouring the browsing feature of the main page over the subscription feed could be deepening the need for the produced custom thumbnails to stand out and be competitive for accidental non-subscribers (Poudel, Cakmak & Agarwal, 2024).

In 2024 YouTube introduced a tool that lets content creators prepare and upload several different YouTube thumbnails for a single video for different focus

groups, or cycle multiple thumbnails. This is an interesting development from the service provider as it aligns with our hypothesis that thumbnails are crucial features.

Visual attention and gaze preference are well-studied phenomena in psychology and cognitive science, with numerous studies confirming that human gaze is influenced by both low-level visual features (e.g., colour, contrast, facial expression) and high-level semantic cues (e.g., social relevance, emotional content). In recent years, research has extended to how these mechanisms operate in digital environments, including social media and video platforms. However, much of the existing literature has focused either on static advertising imagery or general user engagement metrics, with limited attention paid to the specific strategies used in the design of YouTube thumbnails.

This study addresses this gap by examining YouTube thumbnail design specifically through systematic investigation of anecdotal observations. Despite the growing popularity of the platform, there are currently no empirical studies exploring this topic. The literature on the broader subject of YouTube thumbnails remains scarce and fragmented.

Despite the popularity of the service, there is no adequate and systematic empirical research exploring whether and how specific thumbnail features influence users. In particular, the role of gaze-targeting elements (e.g., eye direction, facial positioning, emotional intensity) in shaping viewer behaviour on platforms like YouTube has not been rigorously tested.

The purpose of this study is to investigate whether visual manipulation strategies result in measurable changes in user preference. We aim to determine whether the observed engagement patterns are a product of deliberate design or a self-reinforcing loop driven by platform algorithms and user adaptation. To explore this, we created a controlled attention market simulating thumbnail selection, allowing us to isolate the effectiveness of various visual cues in influencing viewer attention and preference.

We hypothesise that certain visual features commonly used in YouTube thumbnails (e.g., exaggerated facial expressions, direct eye gaze, saturated colours) act as manipulative elements that significantly increase user engagement, thereby shaping content visibility and success.

This study contributes to the research stream exploring whether creators can influence user (consumer) behaviour in a reliable way in a very dynamic environment – the internet. Considerable workload goes into creating content and marketing. It is crucial for producers to know if their resources are well spent. For users, it is also important to know if their behaviour is being manipulated and if their time is well spent. For the market it is important to be sure that

human behaviour is the main driving force of change and development and that the service provider is not the sole market shaping agent, which would be ethically problematic.

The research protocol developed for this study might serve as a viable marketing tool for different applications in neuromarketing.

## 9.2. Methodology

***Data Mining***

To acquire and analyse the data, we needed to set some rules for which videos were of interest. We chose to discard videos that were:

- YouTube shorts – as there is no way to date to create and set a custom thumbnail for a YouTube short, and their views do not come from browsing and competition.
- Music clips – their popularity comes mainly from returning listeners and fans of the artist, and their thumbnails serve a different aesthetic function.
- Part of a serialised content, like a television-, or web-series – their popularity comes mainly from the series' popularity, and their thumbnails are a way to reference the place of the video inside a larger narrative (often containing an episode number or referencing a different plot point from the past).

We used a clean, unused browser in incognito mode. We browsed the "trending" section that features the most popular YouTube videos recently uploaded. Each video that avoided our discriminatory approach was collected by downloading the image in the thumbnail (using an available online tool for thumbnail downloading; we used https://youtube-thumbnail-grabber.com/). Each image was saved and numbered. In addition to downloading, we have also noted the corresponding video's:

1. Number of views.

2. Number of days since upload (age).

50 data points have been collected and numbered (50 videos). The process was complete in one day, 15.12.2024.

To extract workable data from the images, we used a bag-of-words approach. It has been proven useful in a study concerning the interpretation and processing of visual data in a systematic and measurable manner (Qader, Ameen & Ahmed, 2019).

To analyse thumbnails, we used GPT-4, an AI-based model that provides consistent image descriptions. We selected this tool based on its ability to maintain structured output. However, we acknowledge potential biases in AI-generated

content. Other AI tools for image analysis were considered, but GPT-4 proved to be the most verbose and consistent in its style of description. This approach is supported in the literature (Poudel, Cakmak & Agarwal, 2024).

The process consisted of creating a description of a thumbnail and then creating a bag-of-words out of the description (see Figures 9.1 and 9.2).


Figure 9.1. Thumbnail Analysis Process
Source: own elaboration.

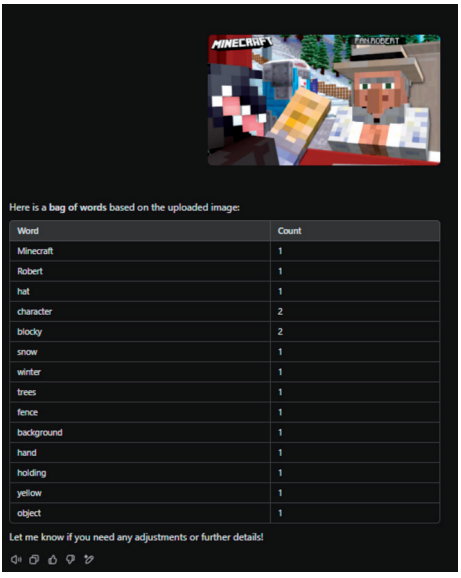


Figure 9.2. Input and Output from Thumbnail Analysis
Source: own elaboration.

After a few attempts, the description generation step was skipped, after GPT-4 consistently provided accurate bag-of-words for each description. This was done to increase efficiency. The description was no longer output by GPT-4.

The GPT-4 instruction was: "I will be sending you YouTube thumbnails. I want you to give me a description of the uploaded image that you will then convert into a bag of words. The bag of words should not contain any YouTube--specific words such as »thumbnail«, »influencer«, etc., because I will be using these data to then prepare new stimuli for a research project. I want you to exclude

any words that have no semantic value, so grammatical words, conjunctions, etc. Send your results in a table, first column containing the word, and the second column containing the word's count."

Resulting data was collected in a table. The words, and their count inherited the videos reference number, view count and age. The words in the word column we will call "nexus" (pl. "nexuses").

Before grouping, the analysis process produced 771 datapoints (see Table 9.1).

Table 9.1. Start (Above) and End (Below) of Nexus List, Ungrouped

| Thumbnail | Nexus | Count | Views | Days | Average views by days | Normalised views |
|---|---|---|---|---|---|---|
| 1 | thumbnail | 1 | 1,800,000 | 7 | 649,635.2941 | 2.770785418 |
| 1 | man | 1 | 1,800,000 | 7 | 649,635.2941 | 2.770785418 |
| 1 | vintage | 1 | 1,800,000 | 7 | 649,635.2941 | 2.770785418 |
| 1 | suit | 1 | 1,800,000 | 7 | 649,635.2941 | 2.770785418 |
| 1 | cigar | 1 | 1,800,000 | 7 | 649,635.2941 | 2.770785418 |
| *…761 rows omitted in this table…* | | | | | | |
| 50 | green | 1 | 207,000 | 8 | 239,426.2295 | 0.864566929 |
| 50 | grass | 1 | 207,000 | 8 | 239,426.2295 | 0.864566929 |
| 50 | outdoors | 1 | 207,000 | 8 | 239,426.2295 | 0.864566929 |
| 50 | nature | 1 | 207,000 | 8 | 239,426.2295 | 0.864566929 |
| 50 | holding | 1 | 207,000 | 8 | 239,426.2295 | 0.864566929 |

Source: own elaboration.

*Normalisation*

Some videos were older and had more time to accumulate views. To correct for that, we needed to normalise the view count. Due to the relatively small number of videos in the data bank, we decided to use a data-driven approach.

To normalise the views, we averaged the views for videos of the same age. Each nexus then has inherited the normalised view count which was calculated using the formula below:

$$Normalised\ views = \frac{Actual\ views}{Average\ of\ views\ of\ videos\ same\ age}.$$

*Performance*

The resulting metric provided a performance score. If normalised views > 1, it means that the video featuring the nexus performed better than videos of the same age. If normalised views < 1, means that the video featuring the nexus underperformed.

The nasopharies were grouped from all videos and their count was summed. This process resulted in 413 unique nexuses. Their performance was averaged, resulting in 413 performance scores for each nexus.

The lowest performance measured was 0.00368 ("flames," "early," "access"). The highest performance measured was 5.347 ("headphones," "frozen," "eyebrows," "cold," "frost").

To select the best performing nexuses, we sorted by count (how many times a nexus featured in a thumbnail). A nexus was allowed on the final list only if its performance was > 1. 8 final nexuses were selected.

Table 9.2. Final List of Chosen Nexuses – the Top 8

| Number | Nexus | Performance | Count |
|---|---|---|---|
| 1 | red | 1.063662022 | 30 |
| 2 | blue | 1.348534291 | 21 |
| 3 | woman | 1.59031823 | 9 |
| 4 | jacket | 1.553736716 | 7 |
| 5 | face | 2.698460902 | 6 |
| 6 | gloves | 1.698511418 | 5 |
| 7 | purple | 1.67474154 | 5 |
| 8 | ornaments | 2.135921198 | 4 |

Source: own elaboration.

***Stimuli Preparation***

4 pairs of images per chosen nexus were generated – control image and experimental image using GPT-4 and Copilot (depending on availability). Prompts were categorised, saved, and a number was assigned for each pair (1.1–1.4; 2.1–2.4, etc.). To minimise bias, we used consistent wording and prompts. That is why the prompt was preceded by a set formula "Please generate in a realistic style with soft lighting in neutral colours." This was also done to ensure the best compatibility of the experimental and control picture. The experimental image in the pair contained the nexus.

Below you can see (Figure 9.3) the prompts used to generate stimuli for pair 1.1 (nexus: "red").

Control: "A simple, calm winter scene with a minimalistic background."

Experimental: "A simple, calm winter scene with a minimalistic background and a small object of red colour."

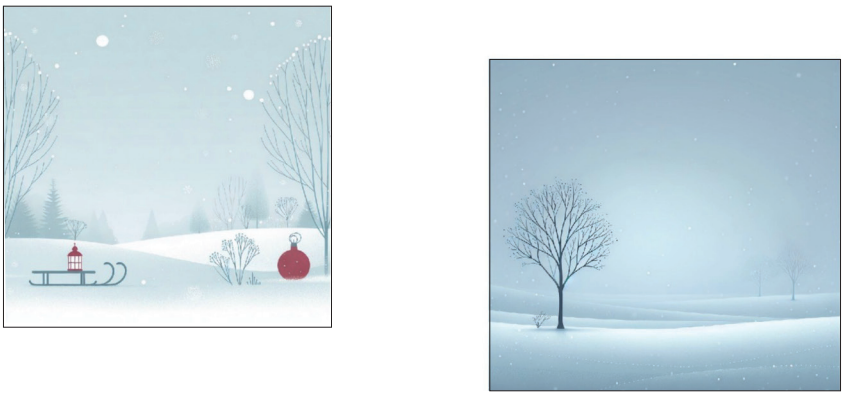

Figure 9.3. Stimuli Pair 1.1. Experimental Image (Left) and Control Image (Right)
Source: own elaboration.

Quality assurance was a case-by-case process to ensure that the control image and the experimental image differed as little as possible, but ultimately it came down to our judgement, which was probably the biggest source of bias in our study.

32 pairs in total were generated. Each pair contained 1 experimental image and 1 control image.

***Empirical Study***

Our research subjects were MBA students from the Krakow School of Business MBA programmes. The median age was 35 years. Each participant had no visual impairment or had it corrected by eyeglasses. All participants were active students of post-graduate programmes and had some professional experience. A total of 37 subjects' data was successfully collected and was ultimately analysed. The research spanned 2 separate weekends.

Our independent variable was the presence of nexus in the image. Our dependent variable was the preference for the gaze of the subjects, which indicated their visual preference, which is a cemented paradigm in eye-tracking studies (Shimojo *et al*., 2003). We have measured 3 different eye-tracking metrics: Dwelling time (gaze), Total fixation time, Number of fixations.

*Procedure*

We have set up the eye-tracking device, to follow the subjects' gaze, in a temporary lab, in a separate room. The firmware used was AcqKnowledge Stimulus Presentation with Eye Tracking and FaceReader Support for AcqKnowledge 5.06. The pairs were shown in a sequence:

$$1.1 \Rightarrow 2.1 \Rightarrow 3.1 \ldots \Rightarrow 7.4 \Rightarrow 8.4.$$

Both stimuli appeared in a semi-randomised layout with slight differences, next to each other (left and right) in a randomised arrangement. The presentation was set-up so that the next pair would appear only after the subject's gaze dwelled on an image for an uninterrupted 1,000 ms. Subjects were informed that the research study will focus on visual attention and the device will be measuring their gaze. The device was calibrated for each participant before the presentation began. The subjects were instructed using the following formula:

"You will see a series of images. These images will be changing quickly, and they will be changing by themselves. You have no task."

*Data Analysis*

A paired directional *t*-test was performed. The aggregated results and image-by-image metrics were calculated to see which images created the observed effect. The aggregated results were acquired by averaging the dwell time, the fixation time and the number of fixations among all participants in each condition (2 sets of 37 results were compared). The singular image results were acquired by comparing 2 arrays – control condition and experimental condition records from 37 participants.

Microsoft Excel was used to prepare and analyse the data. All data collected and data analysis are available on request; see contact section.

## 9.3. Results

The aggregate results showed statistically significant differences between the control and experimental conditions for dwell time, number of fixes, and total fixation time. The variables did not show significant differences, so the Student's *t*-test (critical *t*-value = 2.03) was performed.

The participants gazed longer on the experimental images ($M$ =1,463.78 ms, $SD$ = 316.71) compared to the control images ($M$ = 1,253.92 ms, $SD$ = 331.23). The difference was statistically significant, $t(36) = -3.19$, $p < 0.001$, and the effect size was moderate (Cohen's $d = -0.65$), suggesting a notable difference in the duration of gaze.

The number of fixations on experimental images ($M$ = 4.94, $SD$ = 1.45) was slightly higher than on control images ($M$ = 4.26, $SD$ = 1.42). The *t*-test showed a statistically significant difference, $t(36) = -2.34$, $p < 0.001$, with a small--to-moderate effect size (Cohen's $d = -0.47$).

Total fixation time was also higher for experimental images ($M$ = 999.20, $SD$ = 261.35) than for control images ($M$ = 881.87, $SD$ = 267.44). The *t*-test indicated a statistically significant difference, $t(36) = -2.19$, $p < 0.001$, with a small-to--moderate effect size (Cohen's $d = -0.44$).

All variables showed significant differences between conditions, with effect sizes ranging from small to moderate.

Table 9.3. Mean Values for Dwell Time, Number of Fixations and Total Fixations Time

| Image | Dwell time, mean (ms) | Number of fixations, mean | Total fixations time, mean (ms) |
|---|---|---|---|
| Experimental | 1,463.78 | 4.94 | 999.20 |
| Control | 1,253.92 | 4.26 | 881.87 |
| Background | 513.06 | 1.46 | 318.67 |

Source: own elaboration.

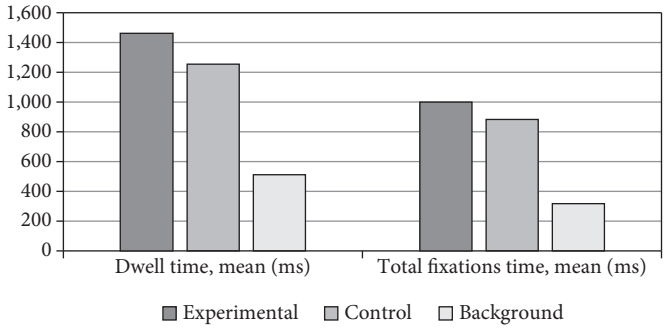


Figure 9.4. Dwell Time and Total Fixations Time
Source: own elaboration.

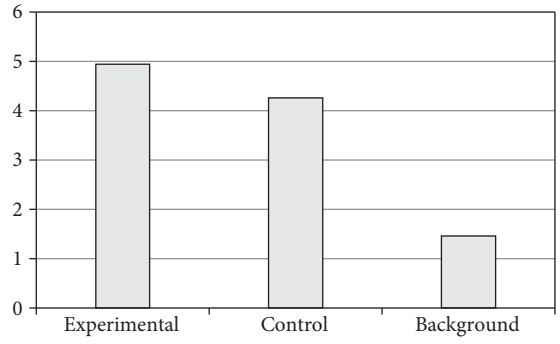


Figure 9.5. Number of Fixations
Source: own elaboration.

The specialised results for each image showed a mixed result. Some pairs of images showed statistically significant differences, while some did not. Some pairs showed partly statistically significant results (for example, for dwell time only).

Table 9.4. Image by Image Results

| Image | Nexus | Dwell time (*p*) | Dwell time *t*-value | Dwell time *df* | Cohen's *d* | Number of fixations (*p*) | Number of fixations *t*-value | Number of fixations *df* | Cohen's *d* | Total fixations time (*p*) | Total fixations time *t*-value | Total fixations time *df* | Cohen's *d* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | red | 0.00 | 2.73 | 36.00 | −0.63 | 0.00 | 2.91 | 36.00 | −0.68 | 0.00 | 2.92 | 36.00 | −0.47 |
| 1.2 | red | 0.04 | 1.47 | 36.00 | −0.34 | 0.10 | 0.82 | 36.00 | −0.19 | 0.12 | 1.10 | 36.00 | −0.19 |
| 1.3 | red | 0.00 | 2.97 | 36.00 | −0.69 | 0.01 | 2.33 | 63.54 | −0.54 | 0.01 | 2.71 | 66.95 | −0.50 |
| 1.4 | red | 0.00 | −2.50 | 36.00 | 0.58 | 0.00 | −2.16 | 36.00 | 0.50 | 0.00 | −3.99 | 64.15 | 0.53 |
| 2.1 | blue | 0.38 | −0.27 | 36.00 | 0.06 | 0.34 | 0.31 | 36.00 | −0.07 | 0.44 | −0.18 | 36.00 | 0.03 |
| 2.2 | blue | 0.00 | 1.99 | 36.00 | −0.46 | 0.01 | 1.51 | 36.00 | −0.35 | 0.01 | 2.31 | 36.00 | −0.37 |
| 2.3 | blue | 0.08 | 1.21 | 36.00 | −0.28 | 0.03 | 1.47 | 36.00 | −0.34 | 0.05 | 1.77 | 36.00 | −0.29 |
| 2.4 | blue | 0.01 | 1.53 | 36.00 | −0.36 | 0.08 | 0.84 | 36.00 | −0.20 | 0.03 | 1.72 | 36.00 | −0.28 |
| 3.1 | woman | 0.00 | 1.99 | 36.00 | −0.46 | 0.00 | 1.68 | 36.00 | −0.39 | 0.01 | 2.27 | 36.00 | −0.39 |
| 3.2 | woman | 0.00 | 3.16 | 36.00 | −0.73 | 0.00 | 2.57 | 36.00 | −0.60 | 0.00 | 3.69 | 36.00 | −0.63 |
| 3.3 | woman | 0.46 | 0.10 | 36.00 | −0.02 | 0.40 | 0.19 | 36.00 | −0.04 | 0.41 | 0.26 | 36.00 | −0.04 |
| 3.4 | woman | 0.00 | 4.72 | 36.00 | −1.10 | 0.00 | 4.42 | 64.41 | −1.03 | 0.00 | 5.86 | 66.79 | −1.09 |
| 4.1 | jacket | 0.31 | −0.37 | 36.00 | 0.09 | 0.12 | −0.81 | 66.48 | 0.19 | 0.32 | −0.54 | 36.00 | 0.08 |
| 4.2 | jacket | 0.01 | 1.69 | 36.00 | −0.39 | 0.00 | 1.94 | 36.00 | −0.45 | 0.01 | 2.78 | 36.00 | −0.44 |
| 4.3 | jacket | 0.08 | −0.88 | 36.00 | 0.21 | 0.20 | −0.54 | 36.00 | 0.13 | 0.03 | −1.91 | 36.00 | 0.29 |
| 4.4 | jacket | 0.03 | 1.69 | 65.18 | −0.39 | 0.03 | 1.37 | 36.00 | −0.32 | 0.02 | 2.19 | 36.00 | −0.38 |
| 5.1 | face | 0.01 | 2.08 | 64.18 | −0.48 | 0.14 | 0.80 | 36.00 | −0.19 | 0.01 | 2.87 | 36.00 | −0.43 |
| 5.2 | face | 0.08 | −1.14 | 36.00 | 0.27 | 0.04 | −1.28 | 36.00 | 0.30 | 0.31 | −0.53 | 65.98 | 0.10 |
| 5.3 | face | 0.01 | 1.78 | 36.00 | −0.41 | 0.02 | 1.12 | 36.00 | −0.26 | 0.12 | 1.00 | 36.00 | −0.17 |
| 5.4 | face | 0.39 | 0.19 | 36.00 | −0.04 | 0.35 | 0.21 | 36.00 | −0.05 | 0.28 | 0.55 | 36.00 | −0.08 |
| 6.1 | gloves | 0.22 | −0.53 | 36.00 | 0.12 | 0.33 | −0.25 | 36.00 | 0.06 | 0.17 | −0.78 | 36.00 | 0.14 |
| 6.2 | gloves | 0.37 | 0.29 | 36.00 | −0.07 | 0.35 | −0.31 | 36.00 | 0.07 | 0.41 | −0.25 | 36.00 | 0.04 |

Table 9.4 cnt'd

| Image | Nexus | Dwell time (*p*) | Dwell time *t*-value | Dwell time *df* | Cohen's *d* | Number of fixations (*p*) | Number of fixations *t*-value | Number of fixations *df* | Cohen's *d* | Total fixations time (*p*) | Total fixations time *t*-value | Total fixations time *df* | Cohen's *d* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.3 | gloves | 0.19 | –0.85 | 36.00 | 0.20 | 0.12 | –0.99 | 36.00 | 0.23 | 0.13 | –1.40 | 36.00 | 0.23 |
| 6.4 | gloves | 0.43 | –0.16 | 46.17 | 0.04 | 0.25 | 0.55 | 57.85 | –0.13 | 0.17 | –2.35 | 46.26 | 0.19 |
| 7.1 | purple | 0.01 | 1.80 | 36.00 | –0.42 | 0.16 | 0.75 | 36.00 | –0.17 | 0.12 | 1.53 | 36.00 | –0.23 |
| 7.2 | purple | 0.06 | –1.28 | 36.00 | 0.30 | 0.03 | –1.31 | 36.00 | 0.31 | 0.05 | –1.78 | 36.00 | 0.28 |
| 7.3 | purple | 0.00 | 3.48 | 36.00 | –0.81 | 0.00 | 3.03 | 36.00 | –0.70 | 0.00 | 3.64 | 36.00 | –0.64 |
| 7.4 | purple | 0.12 | 0.85 | 36.00 | –0.20 | 0.29 | 0.36 | 36.00 | –0.08 | 0.43 | –0.19 | 36.00 | 0.03 |
| 8.1 | ornaments | 0.00 | 3.87 | 36.00 | –0.90 | 0.00 | 2.65 | 36.00 | –0.62 | 0.00 | 3.74 | 36.00 | –0.66 |
| 8.2 | ornaments | 0.40 | –0.26 | 36.00 | 0.06 | 0.33 | –0.37 | 36.00 | 0.09 | 0.44 | –0.17 | 36.00 | 0.03 |
| 8.3 | ornaments | 0.02 | 1.20 | 36.00 | –0.28 | 0.01 | 1.26 | 36.00 | –0.29 | 0.01 | 1.70 | 36.00 | –0.28 |
| 8.4 | ornaments | 0.00 | 3.49 | 36.00 | –0.81 | 0.00 | 2.17 | 36.00 | –0.50 | 0.00 | 3.42 | 36.00 | –0.62 |

Note: Green colour signifies relevant results, pink means no significant result.

Source: own elaboration.

Some nexuses performed better than others on the *t*-test. The "gloves" of the nose did not show no significant results. Table 9.4 illustrates precisely where the general effect comes from. Some variances showed significant differences, and where they did, instead of the Student's *t*-test, Welch's test was performed.

## 9.4. Discussion

The results suggest that the participants displayed a preference for manipulated images over control images in each pair, supporting our hypothesis. Manipulations, nexuses, sourced from the set of analysed YouTube thumbnails proved to be a plausible method of directing attention. The image-by-image analysis shows how and which specific images contributed most to the observed effect.

Each measured variable: dwell time, number of fixes and total fixation time contributed to this result. In the gaze-as-preference paradigm (Thomas *et al.*, 2019; Glaholt & Reingold, 2009; Shimojo *et al.*, 2003), these findings suggest that participants generally preferred stimuli featuring elements found in YouTube thumbnails and were more likely to direct their gaze towards experimental images.

These results show that YouTube content creators, whether intentionally through deliberate design choices or unintentionally by following trends and imitating successful thumbnails, could be influencing user behaviour reliably. Videos featuring thumbnails with elements identified through data mining perform better, reinforcing the effect.

In particular, despite the widespread usage of sexually suggestive content in YouTube thumbnails, such themes were absent from the set of extracted nexuses. This lack of sexual language may be caused by OpenAI's policy and terms of service, and GPT-4 most likely refrained from generating such references when describing the images.

Among the best-performing visual elements, the "red" nexus stood out. Its high effectiveness may have been influenced by the season during which the thumbnails for data mining were sourced. This is further corroborated by the presence of related nexuses such as "ornaments" and "Christmas." However, given that red is a highly salient colour known to attract attention, its usage, popularity, and performance do not surprise. However, this intuitive observation is in clear opposition to the findings of a different study, in which "red" was attributed to a low-view cluster of extracted themes (Poudel, Cakmak & Agarwal, 2024).

The strong standing of the "gloves" nexus may also be seasonal, given that the northern hemisphere experienced the winter season at the time. However, the significance of hands in visual perception as a key human feature, second only to

the face, could explain that too, but considering the image by image analysis, its presence was probably an artefact.

Gender-related trends were also evident. The high performance of the "woman" nexus aligns well with YouTube's user base, which is predominantly male. The "man" nexus showed a performance score of 0.777, suggesting that thumbnails featuring females were preferred while those featuring males underperformed.

## 9.5. Limitations

The primary limitation of this study was the process of preparing stimuli. Creating paired images that differ by the smallest number of features while maintaining realism and avoiding an "uncanny" appearance is challenging and required a QA process involving human researchers' judgement. This process of selection is likely to have introduced confirmation bias as it was impossible to employ a strict selection protocol. To mitigate the effect of possible bias, the prompts were archived and are available on request. To mitigate the potential bias resulting from the created stimuli, we collected and analysed each image result to spot unreliable results.

Another major limitation was the relatively small data set. The attempt to use an automated script for data scraping was not possible due to a phenomenon in which the service's algorithm progressively selects increasingly similar videos. Developing a better and more efficient collection method that allows a much larger data set would greatly improve the study's findings and generalisability.

Additionally, reliance on GPT-4 for data mining introduced potential biases. As mentioned previously, OpenAI's policies likely influenced the dataset by filtering out specific content categories.

One possible explanation for the study's findings is that the manipulated images may have contained more features overall, such as additional points of interest, colours, or objects. This could mean that the observed effects were caused by greater visual complexity (and thus attractiveness for exploration) rather than by the presence of key elements. However, the relatively poor performance of the "gloves" nexus suggests that more contributions do not necessarily guarantee better participation. More research is needed to determine which specific manipulations reliably influence user behaviour.

*Future Research*

Future studies could benefit from expanding the data set used to extract YouTube thumbnails. Additionally, a deeper examination of the differences in

performance between individual images could provide insights into user engagement in response to certain elements or lack thereof.

Another promising research avenue involves trying to employ the advice of content creators' on the effectiveness of their thumbnails. Comparing these insights and practices of practitioners with empirical gaze-tracking data could verify the reliability of the supposed effects organically observed by content creators.

## 9.6. Conclusions

This study demonstrated that manipulated YouTube thumbnails could influence participants' gaze patterns. Despite procedural and design limitations, the study revealed an overall effect and deconstructed the observed effect into specific components behind it. More research is needed to replicate and expand these findings in different cultural and time frames.

The experimental protocol and the participant group proved to be reliable for data collection. Our approach and procedure promise great potential for similar studies. Notably, our protocol could be adapted for use in competitive environments where products, advertisements, or content compete for user attention in low-cost, high intensity environments and markets.

These findings suggest practical implications for marketers in digital media markets and content creators. Thumbnail design can be a powerful tool to drive user engagement. By treating thumbnails as a digital "first impression" and strategically shaping their design, organisations can improve engagement and better align their products with consumer expectations. Managers could employ small--scale user or employee testing to identify effective designs to better orient their customer and employee attention, within appropriate digital systems. Although this study does not provide a comprehensive marketing model, it is proof of concept that organisations can adapt on different scales depending on needs and constraints.

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Chapter 10

# Paradigms and Concepts of Socially Responsible Marketing in the Context of Innovative Managerial Approaches and Sustainable Development

Olena Bochko, Khrystyna Sahan

## 10.1. Introduction

The 21st century is characterised by the intensification of environmental, social, and technological challenges, which require a critical reassessment of traditional business paradigms. In this context, the classical profit-orientated approach to marketing is increasingly recognised as inadequate in addressing the complex demands of contemporary society. A paradigm shift is underway, where socially responsible marketing (SRM) is emerging as a progressive alternative. This model emphasises the incorporation of ethical, environmental, and social dimensions into corporate strategies that prioritise long-term sustainable development (Okhrimenko & Ivanova, 2015).

The evolution from traditional marketing to a socially responsible framework signifies the increasing importance of ethical, ecological, and cultural considerations within business and management practices. This transition underscores the growing awareness of the interdependence between business performance and broader social well-being.

Contemporary management approaches, particularly those grounded in digital transformation, decentralised decision-making, cross-sectoral collaboration, and stakeholder engagement, significantly enhance the potential to implement socially responsible strategies. These mechanisms facilitate the effective alignment of corporate, social and governmental interests, thereby fostering the development of enduring competitive advantages and contributing to the accumulation of social capital.

Within this framework, socially responsible marketing plays an essential role as a transformative tool that enables the reconfiguration of business models

in the direction of environmental sustainability, social inclusion, and economic resilience. Its integrative capacity positions SRM as a critical element in navigating the complexities of the current global landscape.

## 10.2. Relevance of the Topic

Contemporary global business trends are increasingly shaped by the principles of transparency, sustainability, inclusion, and ethical responsibility. As a fundamental component of business-consumer interaction, marketing must evolve in accordance with these changing expectations. Within this framework, SRM is emerging as a strategic paradigm within enterprise management systems, particularly under conditions characterised by uncertainty, security risks, energy challenges, and ongoing social transformation (Petrovskyi, 2024).

Of particular importance is the role of SRM in improving consumer loyalty and cultivating a positive corporate reputation. By adopting and integrating corporate social responsibility (CSR) practices, firms foster long-term trust with stakeholders and society at large, thus strengthening their reputational capital and achieving sustained competitive positioning (Kotler & Lee, 2005).

In light of current international initiatives and growing societal demands, there is a pressing need to formulate a new managerial paradigm that synergises the value-based principles of socially responsible marketing with the tools and approaches of innovative management. Against this backdrop, the theoretical exploration and empirical investigation of SRM – particularly in terms of its conceptual foundations, implementation models, and practical mechanisms – gain heightened relevance for both academic research and practical application in a dynamic and complex external environment.

## 10.3. Research Problem

In the current global context, the transformation of corporate marketing strategies in accordance with the principles of sustainable development has acquired a particular urgency. This is especially relevant given the growing influence of digital technologies and artificial intelligence in all sectors of economic activity. The evolution of marketing is increasingly orientated toward the systemic integration of SRM with the Sustainable Development Goals (SDGs), reflecting a shift in strategic focus from short-term profit generation to long-term value creation and societal well-being. Under the influence of global sustainability challenges and the increasing public demand for corporate accountability, marketing practices are undergoing substantial conceptual and operational transformation.

The Ukrainian academic discourse devotes considerable attention to the role of socially responsible marketing in fostering long-term business value and stable consumer relations. For example, Sobko and Furyk (2024) explore the strategic dimensions of SRM and its ability to enhance reputational capital and strengthen a firm's competitive positioning in turbulent environments. A growing body of research also addresses the digital dimension of marketing transformation, emphasising its importance for enterprise sustainability in the digital age. Tataryntseva, Yurieva, and Nazarova (2023) investigate the effectiveness of sustainable digital marketing as a tool for improving enterprise performance amid the transition to a knowledge-based economy. Their findings point to the importance of digital tools in fostering environmental and social responsibility across marketing functions.

Similarly, Illiashenko and Chygryn (2023) consider SRM through the lens of Industry 4.0, focussing on its role in advancing sustainable innovation through the integration of environmental, ethical, and social considerations into marketing strategies. These insights align with broader trends in the literature that frame marketing as an essential component of organisational transformation in response to digitalisation and sustainability imperatives.

An important contribution to the conceptual development of this field is made by Chernyshova (2025), who examines the determinants of sustainable development in marketing activities and proposes a comprehensive model of integrated sustainable marketing. This model is grounded in the principles of transparency, trust, and value-based stakeholder engagement, emphasising the importance of social dialogue in establishing legitimacy and long-term cooperation between firms and their stakeholders.

The international scholarly literature similarly emphasises the relationship between SRM and the SDGs. Rodriguez-Sanchez (2023) demonstrates that social marketing plays a critical role in promoting environmentally responsible behaviour among citizens, thereby contributing to the realisation of environmental objectives within the framework of the 2030 Agenda for Sustainable Development. Rahmani and Alavi (2024) also highlight the relevance of SRM in aligning marketing strategies with the imperatives of sustainable development, proposing strategic instruments for the integration of marketing policy into sustainability agendas.

Practical dimensions of SRM are elaborated in reports by international institutions. The European Commission (2023), in the context of the European Green Deal, presents examples of integrating sustainable development principles into corporate marketing activities through eco-labeling, ESG reporting, and the development of sustainability-oriented marketing strategies. The UN Global

Compact (2023) further advocates for "mission-driven marketing" as a means of reinforcing consumer trust and expanding the social impact of brands. These institutional approaches underscore the instrumental role of SRM not only in ensuring regulatory compliance but also in generating shared value, enhancing stakeholder engagement, and contributing to the long-term resilience of businesses in the face of global challenges.

In addition to scholarly sources, applied analytical materials constitute a valuable component in understanding current trends in socially responsible marketing. These materials provide practical insights that complement theoretical frameworks and contribute to a more holistic understanding of contemporary marketing transformations. For example, the report by the SK Agency (2024) explores how marketing strategies can be effectively adapted to meet the requirements of sustainable development. The analysis highlights several key practices, including transparent brand communication, the integration of recycled materials into product design, and the intensification of brand-driven educational initiatives aimed at promoting sustainable consumption.

Similarly, the Claspo platform (2023) presents a synthesised overview of the essential elements of sustainable marketing. Particular emphasis is placed on conceptual differentiation between "green marketing" – which typically focusses on environmental claims – and broader models of corporate socio-environmental responsibility, which entail comprehensive alignment with sustainability goals in all aspects of corporate activity.

This study aims to critically examine the prevailing paradigms and conceptual foundations of socially responsible marketing within the broader context of developing innovative management approaches conducive to sustainable business development. The research is grounded in the recognition that SRM represents an evolving interdisciplinary domain that requires both theoretical systematisation and practical applicability.

Consequently, the following research objectives are identified:

1. Examine the key paradigms of socially responsible marketing and differentiate between its ethical, social, environmental, economic, intellectual, and technological dimensions.

2. Analyse the interrelated concepts of green marketing, responsible consumption, and corporate social responsibility as integral components of the sustainable marketing discourse.

3. Systematise methodological approaches for the study of SRM within the specific context of the Ukrainian restaurant industry, recognising its unique market dynamics and stakeholder structures.

4. Develop management recommendations tailored to three main stakeholder groups involved in the implementation of socially responsible marketing practices: business enterprises, consumers, and government institutions.

This research framework facilitates a comprehensive and multidimensional exploration of SRM, supporting its conceptual advancement and practical integration within sustainable development strategies.

The third stage of the research involved the analysis of publicly accessible online sources, including official company websites, industry-specific press publications, analytical reports, and social media content that document the practical implementation of SRM policies. Particular emphasis was placed on evaluating the deployment of digital technologies in the context of responsible marketing – specifically, the use of artificial intelligence tools, customer relationship management (CRM) systems, and consumer behaviour analytics. This facilitated a deeper understanding of the extent to which digitalisation contributes to improving the social and environmental impact of marketing campaigns.

A distinct focus was also placed on the evaluation of educational and social initiatives aimed at cultivating a culture of responsible consumption, advancing corporate ethical standards, and supporting vulnerable social groups, including veterans, people with disabilities and internally displaced persons (IDPs). Special consideration was given to regional-level enterprises that not only adapt global SRM practices to local contexts but also serve as incubators for innovative approaches to the implementation of responsible marketing at the community level.

The empirical material collected was systematically classified according to the core paradigms of socially responsible marketing: ethical, social, environmental, economic, intellectual, and technological. For each of these dimensions, an in-depth analysis was conducted using the following evaluative criteria:

- the target objectives and declared corporate commitments,
- the tools and mechanisms employed for the implementation of SRM,
- the degree of alignment with the United Nations Sustainable Development Goals (SDGs),
- the expected and achieved outcomes of the applied practices.

An integral component of the research involved an expert assessment of the effectiveness of SRM instruments, carried out in collaboration with specialists in corporate social responsibility and marketing analytics.

From a methodological point of view, the study relied on the following approaches:

- desk research, entailing the examination of corporate documents and industry-specific publications,

- content analysis of textual materials, including official reports, digital platforms, mass media outputs, and social network posts,
- comparative analysis of national practices with international standards and exemplary cases of implementation of SRM.

The key strength of the proposed research design lies in its integration of various information sources and its focus on the practical implementation of socially responsible marketing concepts. This not only ensures a comprehensive understanding of the phenomenon under study, but also enhances the applied relevance of the findings, particularly in the context of advancing the development of the Ukrainian restaurant industry within the framework of sustainable and responsible business practices.

Despite the methodological objectivity ensured by the selected research approaches, the study is subject to several limitations that must be acknowledged to properly contextualise the findings.

One key limitation concerns restricted access to internal corporate data. Although CSR and sustainability reports are publicly available, they often lack detailed information on internal decision-making processes and organisational culture. Consequently, it becomes difficult to accurately assess the depth, effectiveness, and authenticity of the strategies implemented. Many vital components – such as informal practices, employee participation, or internal alignment of social responsibility goals – remain beyond the scope of external observation.

Another significant constraint lies in the subjectivity of the conceptual interpretation of the SRM. The notion of socially responsible marketing is not universally defined and varies between national and regional contexts. For example, the European model tends to emphasise compliance with legal and regulatory frameworks, while the North American approach focusses more on voluntary corporate initiatives. These conceptual differences hinder direct cross-country comparisons and necessitate the contextual adaptation of theoretical frameworks to suit each individual case.

Additionally, the research was conducted under the conditions of martial law in Ukraine, which significantly influences corporate behaviour and priorities. In a crisis environment, businesses tend to shift their focus from long-term sustainability to immediate survival. As a result, instead of investing in comprehensive environmental, social, and governance (ESG) strategies, companies often prioritise humanitarian aid, support for military efforts, or the provision of essential services and protection for employees and their families. These contextual factors must be taken into account when assessing the effectiveness of the SRM during wartime.

The rapid evolution of digital technologies presents another methodological challenge. Tools such as artificial intelligence, which were considered innovative just 3 to 5 years ago, have become standard practice in many industries. This technological fluidity complicates the documentation and evaluation of truly novel practices, as innovations quickly lose their "cutting-edge" status. However, this dynamic nature of technology underscores its strategic importance and flexibility, particularly in conditions of economic instability and crisis management.

To enhance the credibility and validity of the study, several methodological safeguards were implemented. First, only official and verified sources were utilised, including corporate reports, publications by international organisations, and analytical papers from reputable institutions. Second, a comparative analysis was conducted in multiple companies with similar profiles, specifically within the restaurant business sector, to ensure a more robust and representative evaluation. Third, public reactions to SRM initiatives were examined by analysing comments, news media coverage and online reviews, providing information on stakeholder perceptions and social resonance.

In addition, a bias check procedure was applied by triangulating data from various sources – official documentation, independent media outlets, and civil society initiatives. Particular attention was devoted to the verification of quantitative indicators: reported statistics were cross-validated using third-party analytics, public sector data, and expert commentary.

As a result, the findings of this study demonstrate a high degree of contextual validity within the Ukrainian environment. Furthermore, the insights obtained can serve as a basis for the development of practical recommendations, both at the level of individual enterprises and in the strategic governance of the industry in general.

## 10.4. Main Content

### 10.4.1. Theoretical Review of Paradigms and Concepts of Socially Responsible Marketing

The evolution of socially responsible marketing can be traced back to the second half of the twentieth century, a period during which companies began to recognise the imperative of integrating social and environmental considerations into their operational and strategic frameworks. Initially perceived as a form of corporate altruism, SRM gradually evolved into a systemic component of strategic management, reflecting the growing expectation of companies to engage in ethical and socially accountable practices. As noted by Rybina (2020), socially responsible marketing constitutes a synthesis of traditional marketing principles

and corporate social responsibility, allowing companies to align their commercial objectives with the broader interests of society.

Comparison of traditional and socio-ethical marketing is presented in Table 10.1.

Table 10.1. Comparison of Traditional and Socio-ethical Marketing

| Criterion | Traditional marketing | Socially responsible marketing |
|---|---|---|
| Main goal | Profit maximisation, sales growth | Balance between profit, social values, and sustainability |
| Orientation | Consumer as buyer of goods/services | Consumer as partner and participant of social change |
| Focus | Short-term results | Long-term value (reputation, trust, sustainable development) |
| Tools | Advertising, promotions, pricing | ESG reporting, social programmes, eco-initiatives, digital tools (AI, CRM) |
| Stakeholder interaction | One-way (company → client) | Multi-stakeholder (company community state NGOs) |
| Impact on society | Side effect, sometimes negative | Direct positive impact (responsible consumption, community support) |
| Examples | Mass FMCG companies | Patagonia, Ben & Jerry's, 100 Rokiv Tomu Vpered, Veterano Pizza |

Source: developed by the authors.

Unlike traditional marketing, whose primary goal is profit maximisation and sales growth, SRM seeks to harmonise economic benefits with social values and the principles of sustainable development. Traditional marketing views the consumer merely as a buyer of goods and services, serving as the final recipient of advertising campaigns and promotions. At the same time, within SRM, the consumer is regarded not only as a target audience but also as a partner and co-creator of social change. Overall, the focus of traditional marketing is concentrated on achieving short-term results, whereas SRM is oriented toward long-term value, such as trust, reputation, business resilience, and community support.

In their examination of the fundamental components of SRM, Tkal, Babina, Horban, and Muzychenko (2025) highlight the importance of aligning marketing practices not only with ethical norms, but also with the Sustainable Development Goals (SDGs) established by the United Nations (United Nations Development Programme, 2023). This approach contributes to the transformation of the marketing paradigm – shifting the focus away from simple transactional outcomes and toward the creation of long-term stakeholder value. Contemporary marketing discourse increasingly views socially responsible corporate behaviour through a set of distinct paradigmatic lenses, each reflecting a particular dimension of the company's priorities and interactions with the external environment.

Depending on the primary focus – ethical, social, environmental, economic, intellectual, or technological – corresponding SRM paradigms are distinguished.

Among these, the ethical paradigm is often regarded as the foundational dimension of socially responsible marketing. It encompasses the company's commitment to universal human values, including fairness, integrity, and transparency in all aspects of business conduct. Dyck and Manchanda (2021) emphasised the theory of virtue ethics and the orientation toward optimising social and environmental well-being alongside financial viability. At the same time, Prothero and McDonagh (2021) provide a critical assessment of the SET-marketing approach in three respects: (a) the use of virtue ethics as its ethical foundation; (b) the instrumentalisation of the 4Ps as a practical mechanism; and (c) the neglect of systemic and institutional barriers that hinder its implementation. The institutionalisation of codes of ethics, the implementation of anti-corruption policies, and a commitment to accountability – both internally to employees and externally to clients – form the backbone of this paradigm (Tkach & Tkach, 2021).

At a time when corporate reputation serves as a critical intangible asset, the ethical paradigm plays a pivotal role in building trust and reinforcing brand credibility. International corporations such as Patagonia (https://www.patagonia.com) and Ben & Jerry's (https://www.benandjerrys.ca) exemplify the operationalisation of this model; both organisations publicly uphold rigorous ethical standards that form the cornerstone of their competitive advantage and market positioning. Their sustained commitment to social justice, environmental sustainability, and transparency demonstrates the strategic value of ethical marketing in cultivating long-term consumer loyalty and reinforcing brand identity in a socially conscious marketplace.

Building upon the foundation of business ethics, the logical progression in socially responsible marketing leads to the social paradigm, in which enterprises acknowledge their active role in addressing social challenges. This dimension of SRM encompasses a range of initiatives, including support for local communities, philanthropic activities, inclusive development programmes, volunteerism, and social entrepreneurship. As noted by Romat, Aldankova and Berezovyk (2017), this behaviour is not directed toward immediate profit generation; rather, it seeks to strengthen the relationship between business and society. In this regard, social investments are conceptualised as a long-term strategic approach that contributes to the accumulation of trust capital and improves the legitimacy of the company within its socio-economic environment.

At the intersection of social responsibility and global sustainability concerns, the environmental paradigm arises. This dimension emphasises the

integration of green marketing practices, including the adoption of resource--efficient technologies, the shift toward a circular economy, and the ecological certification of products and production processes. According to Mohammadi, Shabani and Zarei (2023), environmental responsibility serves as a source of sustainable competitive advantage, enhancing both brand positioning and stakeholder engagement. Similarly, Ghobbe and Nohekhan (2023) assert that brands that publicly commit to eco-friendly values tend to cultivate higher levels of consumer loyalty and reputational strength. Thus, the environmental paradigm reframes the perception of business not as a source of ecological degradation but as an active partner in the achievement of the Sustainable Development Goals (SDGs) of the United Nations.

Despite the predominantly humanistic orientation of the ethical, social, and environmental paradigms, the economic dimension of SRM remains critical. It underscores the notion that SRM should not be viewed solely as a cost center but as a strategic investment in business resilience and long-term value creation. Firms that integrate ESG principles – encompassing environmental, social, and governance indicators – often exhibit greater financial stability, enhanced risk management capacity, and improved reputational capital (Petrovskyi, 2024). This approach fosters a balanced governance model, enabling firms to reconcile profitability with responsibility, thereby achieving sustainable organisational performance.

In the context of the ongoing transition to a knowledge-based economy, increasing attention is directed toward the intellectual paradigm of SRM. This paradigm is rooted in the utilisation of creative capital, innovative capacity, organisational adaptability, and digital literacy. As observed by Rybina (2020), intellectual capital forms the cornerstone of sustainable business development. Within this paradigm, marketing plays a critical role in transmitting values that contribute to the emergence of an innovation-driven culture, both within the organisation and across broader society.

Finally, the technological paradigm highlights the importance of aligning digital transformation with the principles of socially responsible marketing. Technological tools such as artificial intelligence (AI), big data analytics, and process automation empower companies to better understand consumer behaviour, anticipate social trends, and design targeted interventions. Kotler and Lee (2025) emphasise that the integration of AI in corporate social responsibility initiatives enables personalisation at scale, significantly improving the effectiveness of audience engagement. This paradigm not only revitalises traditional marketing instruments, but also opens new avenues for generating social impact and fostering responsiveness to societal needs in the digital age.

The historical milestones and the formation of SRM development paradigms are systematised in Table 10.2.

Table 10.2. Comparative Table of Socially Responsible Marketing Paradigms Development

| Paradigm | Core features | Anticipated impact |
|---|---|---|
| Ethical | Adherence to ethical standards, honesty, fairness, and transparency | Strengthening reputation and fostering consumer trust |
| Social | Social investments, community support, volunteering, and charitable activities | Social legitimacy and the enhancement of trust capital |
| Environmental | Resource conservation, environmentally friendly products, and waste management | Customer loyalty and positive brand perception |
| Economic | Integration of ESG principles and long-term economic efficiency | Financial stability and competitive advantages |
| Intellectual | Innovation, creativity, and intellectual capital | Sustainable development driven by novel ideas |
| Technological | Digitalisation, the use of AI, and interaction automation | Effective personalisation and trend forecasting |

Source: developed by the authors.

The formation of the socially responsible marketing paradigms presented in the table is based on a systemic interdisciplinary approach that integrates value orientations, strategic business objectives, and societal expectations. Each paradigm reflects a distinct dimension of responsibility that is essential for shaping a modern marketing model focused not only on profit but also on long-term sustainability, trust, and social impact.

Thus, the comparative analysis of the paradigms of socially responsible marketing reveals their multidimensional nature, encompassing the ethical, social, environmental, economic, intellectual, and technological aspects of modern business activity. Each paradigm has its own focus, values orientations, and expected outcomes.

### 10.4.2. The Relationship between Socially Responsible Marketing and the Sustainable Development Goals (SDGs)

The relationship between socially responsible marketing and Sustainable Development Goals (SDGs) is deep and systemic, as both concepts aim to achieve a balance between economic growth, social justice, and environmental sustainability.

Socially responsible marketing is a mechanism through which companies not only promote products or services but also integrate the principles of sustainable development into their communication, brand strategy, and production

policy. For example, the development of environmentally friendly products or the implementation of fair trade practices directly supports SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action).

The UN Sustainable Development Goals (2015–2030) – particularly SDG 1 (No Poverty), SDG 3 (Good Health and Well-Being), SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth) – form a value-based and normative foundation for the development of SRM strategies. Businesses that operate in alignment with these goals gain social legitimacy, customer trust, and stakeholder loyalty.

The key characteristics of the paradigms used in the SRM study are systematised in Table 10.3.

Table 10.3. Key Characteristics of the Paradigms Used in the SRM Study

| Paradigm | Core orientation | Tools | Alignment with SDGs | Expected outcome |
|---|---|---|---|---|
| Ethical | Values and moral principles | Codes of conduct, ethics committees | Goal 16 – Peace, Justice and Strong Institutions | Increased trust in the company |
| Social | Social needs | Social programmes, inclusion, | Goal 10 – Reduced Inequalities | Strengthening of social capital |
| Veteran support | | | | |
| Environmental | Environmental protection | Eco-packaging, waste minimisation | Goal 13 – Climate Action | Reduction of negative environmental impact |
| Economic | Efficiency and stability | ESG reporting, auditing, sustainable development tools | Goal 8 – Decent Work and Economic Growth | Financial sustainability |
| Intellectual | Knowledge and learning | Educational initiatives, internal development | Goal 4 – Quality Education | Staff development and innovation |
| Technological | Innovation | CRM systems, AI, digital solutions | Goal 9 – Industry, Innovation and Infrastructure | Enhanced competitiveness |

Source: developed by the authors.

Thus, SRM enables the transformation of corporate activity toward social engineering, in which the company becomes an active agent of change within its community. This includes support for education (SDG 4), environmental initiatives (SDG 15), infrastructure development (SDG 9), and partnerships for sustainable development (SDG 17). In this way, the marketing function extends beyond the market and acquires a socially transformative role.

### 10.4.3. Practical Implementation of Socially Responsible Marketing in the Restaurant Business of Ukraine

The functioning of the restaurant business in Ukraine is a complex and dynamic process influenced by both external challenges (economic, social, and military) and internal transformations in consumer preferences, service technologies, and management models. It encompasses a wide range of formats, from fast-food outlets, cafés, and coffee shops to mid-range and premium-segment restaurants. A SWOT analysis of the restaurant business in Ukraine is presented in Table 10.4.

Table 10.4. SWOT Analysis Restaurant Business of Ukraine

| Strengths | Weaknesses |
|---|---|
| – Integration of social mission into business model<br>– Support for local farmers, reduced carbon footprint<br>– Use of digital tools and AI (CRM, personalisation)<br>– High customer loyalty (+40%)<br>– Positive media image (Forbes, TEDx, etc.) | – Lack of standardised analytical framework<br>– High costs of eco/social programmes<br>– Limited financing for SMEs<br>– Risk of greenwashing perception |
| **Opportunities** | **Threats** |
| – Rising demand for responsible consumption<br>– International partnerships (EU, UN)<br>– Cultural diplomacy via gastronomy<br>– State support for veteran entrepreneurship<br>– SRM as competitive advantage in crisis | – War conditions: instability, resource shortages<br>– High cost of technological innovations<br>– Potential fatigue from charitable initiatives<br>– Regulatory barriers, ESG reporting burden<br>– Competition from international chains with SRM |

Source: developed by the authors.

The restaurant 100 Rokiv Tomu Vpered (https://www.100rokiv.com.ua), established in 2019 by renowned Ukrainian culinary expert Yevhen Klopotenko and Inna Poperezhniuk, represents a compelling case of SRM implementation in the Ukrainian context. The central concept behind the establishment extends beyond the popularisation of modernised Ukrainian cuisine; it is grounded in the ambition to foster a new culture of responsible consumption and generate social impact through gastronomy. The restaurant positions itself not only as a commercial food service provider, but as a cultural institution that reinterprets the national gastronomic heritage and integrates it into contemporary social narratives.

Complementing restaurant operations, Klopotenko founded the Institute of Food Culture, a multidisciplinary platform that supports educational, research, and cultural initiatives. This platform aims to transform food perceptions at various social levels – including schools, communities, and the media – thereby facilitating SRM not only through direct consumer engagement but also through systemic educational outreach.

The social mission of 100 Rokiv Tomu Vpered transcends notably the boundaries of traditional customer service. During the full-scale Russian invasion of Ukraine, the restaurant was transformed into a volunteer hub, providing free meals to military personnel, internally displaced persons (IDPs) and low-income citizens. As part of the "We Are Near" initiative, the establishment prepared up to 1,000 meals per day, working in collaboration with charitable foundations and volunteer organisations (Klopotenko, 2023).

In addition to humanitarian aid, the restaurant's team has actively pursued initiatives aimed at expanding the reach of socially responsible practices in the food sector, including:

- the development of online cooking courses on Ukrainian cuisine tailored for IDPs,
- the organisation of educational workshops in schools and vocational institutions on the principles of healthy and balanced eating,
- participation in public awareness campaigns promoting sustainable consumption and food ethics,
- support for local initiatives focused on preserving traditional Ukrainian culinary heritage.

The socially responsible marketing study at the restaurant 100 Rokiv Tomu Vpered was conducted with the participation of marketing experts and consumers. The criteria for selecting research indicators were based on an interdisciplinary approach. The evaluation covered indicators such as the number of visitors, the number of educational events, the reach of the online audience, and the use practices of sustainable resources. This approach allows a comprehensive assessment of the role of the restaurant as a social and cultural institution.

To implement its SRM strategy, the restaurant employs a set of integrated tools rooted in environmental and social responsibility. In particular, the team prioritises the use of "green" products by cooperating with local farmers and agricultural enterprises that adhere to the principles of organic farming. This approach contributes to reducing the carbon footprint related to logistics, supports local small businesses, and improves the quality of raw ingredients used in food preparation. The procurement is primarily sourced from farms located in the Kyiv, Poltava, and Lviv regions, thus fostering regional economic sustainability and agroecological awareness.

Through the synergy of gastronomic innovation, cultural identity, and social engagement, 100 Rokiv Tomu Vpered exemplifies how SRM can be holistically embedded into the mission, operations, and impact strategy of a contemporary food enterprise operating in a complex socio-political environment.

An integral component of SRM strategy implemented by 100 Rokiv Tomu Vpered is the creation of an inclusive service environment. The restaurant has introduced a range of accessibility measures for individuals with disabilities, including Braille signage, as well as menu adaptations for vegans, vegetarians, and persons with lactose or gluten intolerance. Special attention is also paid to child-friendly dishes, ensuring broad inclusion across different consumer groups.

Active use of digital technologies represents another key pillar of restaurant SRM practices. Keeping a consistent presence on Instagram, Facebook, and YouTube, the restaurant regularly conducts campaigns promoting conscious eating, sustainability, and culinary education. In addition, it has developed a mobile application that features personalised menu recommendations and detailed information about local suppliers, thereby improving consumer awareness and engagement.

In addition, the restaurant has embraced artificial intelligence (AI) as part of its technological paradigm. The implementation of recommendation algorithms within the online ordering system, coupled with automated feedback analysis, enables the business to personalise offerings based on user preferences and optimise communication strategies. These innovations align with global trends in data-driven marketing and reflect the integration of intelligent systems into SRM.

The cumulative effect of these initiatives has been translated into a set of tangible strategic benefits for the company. Among the most notable outcomes are:

- an increase in customer loyalty exceeding 40%, as reported by the Institute of Food Culture and Klopotenko (2023),
- extensive positive media coverage in leading national outlets such as Forbes Ukraine, MC.today, and Ukrainska Pravda.Zhyttia, which contributed to significantly improved brand recognition (Forbes Ukraine, 2022),
- rising international interest in Ukrainian cuisine as a tool of cultural diplomacy, facilitated through participation in TEDx talks and EU culinary forums,
- the development of a stable partnership ecosystem involving local producers, charitable foundations, and educational institutions,
- operational efficiency gains through digitalisation of procurement processes, logistics optimisation, and heightened staff engagement in SRM practices.

Through the systematic application of SRM principles, 100 Rokiv Tomu Vpered exemplifies the practical realisation of all six paradigms of socially responsible marketing – ethical, social, environmental, economic, intellectual

and technological. This case illustrates that SRM is not only an ethical imperative, but also a strategic development tool that fosters brand value, stakeholder trust, and operational resilience.

Following the case study of this innovative restaurant – where gastronomic culture is intertwined with digital tools to advance social responsibility – it is appropriate to explore another distinct segment of SRM in Ukraine: veteran-led enterprises in the restaurant industry. These initiatives represent a unique form of value-driven entrepreneurship, particularly relevant in the context of the ongoing full-scale war.

Table 10.5. Restaurants Combining Principles of Sustainable Development and Socially Responsible Marketing

| Name | Sustainability principles | Socially responsible marketing |
|---|---|---|
| Crave Fishbar / Crave Sushi (New York, USA) | Rejection of critically endangered fish species; donations to "Save the Reef"; transparent sourcing information | Emphasis on ethical sourcing; brief explanations in the menu; donation option included in the bill |
| Hawksmoor (United Kingdom) | B Corp certification; energy-efficient lighting; ethically sourced meat; employee welfare programmes | Certification signals transparent practices and appeals to ethically conscious consumers |
| Wahaca (United Kingdom) | Recognised as the greenest restaurant chain; $CO_2$ emissions reporting; sustainable supply chain | Marketing highlights environmental achievements and positions the brand as an eco-provider |
| Grill'd (Australia) | Waste oil recycled into biodiesel; green energy use; support for local community initiatives | Customer voting for charity projects; transparent impact reporting |
| LYFE Kitchen (USA) | Biodegradable packaging; local ingredients; LEED certification; | Communication emphasises healthy food, environmental |
| | Energy efficiency | Responsibility, and social engagement |
| Mt. Joy (USA) | Regenerative agriculture; partnerships with local farmers; climate-conscious logistics | Marketing reinforces the brand's climate mission: "fight climate change" |
| Veterano Pizza (Ukraine) | Social entrepreneurship; veteran reintegration; corporate ethics | Focus on personal stories and community service as part of brand communication |
| Pizza Veterano Family (Lviv, Ukraine) | Inclusion; local sourcing; environmental responsibility | Charity hub model, culture of mutual aid, rapid community response in crises |

Source: developed by the authors.

Unlike traditional business ventures, veteran-founded enterprises often arise from personal experiences of service and sacrifice. Upon returning from combat, veterans begin businesses that function not only as commercial entities but also as social ecosystems, designed to support fellow veterans, empower communities, and instil ethical values in business conduct. These enterprises embed SRM into their foundational mission, reflecting a shift from purely

economic motives to a values-based model of entrepreneurship. As noted by Radio Svoboda (2020), such businesses represent a growing movement of civic-orientated enterprise, in which social reintegration, community service, and responsible management converge to define a new ethos of Ukrainian business in times of national crisis.

Table 10.5 presents a list of restaurants that combine the principles of sustainable development with socially responsible marketing.

Particular attention must be paid to the socio-emotional dimension of veteran-led enterprises. These businesses are not only focused on the commercialisation of services, but also serve as platforms for psychosocial healing, social reintegration, and the promotion of new forms of value-based leadership. Veteran entrepreneurs frequently take on the role of mentors for younger servicemen and women, host public discussions, deliver educational lectures in schools, and lead awareness campaigns on topics such as mental health, resilience, and self-employment. Their participation fosters a strong sense of community and helps redefine post-service identity through socially responsible entrepreneurship.

The comparative analysis of both examined cases – 100 Rokiv Tomu Vpered and veteran-led restaurant initiatives – demonstrates that the paradigms of socially responsible marketing (that is, ethical, social, economic, and intellectual) are not merely declarative or rhetorical constructs, but are structurally embedded within business models. This integration is evidenced by the following key directions:

1) the institutionalisation of responsibility as an ethical imperative, reflected in mission statements, codes of conduct, and value-driven practices,

2) the transformation of customers into co-participants of the enterprise's social mission, achieved through donations, event participation, and social media engagement,

3) the establishment of long-term partnerships founded on shared values and social goals, rather than short-term commercial gain.

## 10.5. Conclusions and Recommendations

In light of the widespread and increasingly systematic implementation of socially responsible marketing in Ukrainian business practices, it is timely and necessary to summarise the key research findings and outline recommendations for improving SRM strategies in conditions marked by wartime disruption, societal transformation, and economic uncertainty. In addition, identifying directions for future academic inquiry will support the advancement of a robust

and evidence-based understanding of the effectiveness of SRM in transitional economies.

The findings of this study confirm that SRM is evolving from a discretionary strategy employed by large corporations into a mandatory component of sustainable development for companies of various sizes, ownership forms, and sectoral affiliations. In the context of social upheaval, armed conflict, ecological degradation, and digital economic restructuring, SRM serves not only as an ethical framework but also as a strategic mechanism to ensure business continuity, adaptability, and competitive advantage.

The study has allowed the identification of six key SRM paradigms – ethical, social, economic, environmental, intellectual, and technological. Each paradigm possesses different modes of implementation; however, it is their synergistic and integrated application that facilitates the development of a comprehensive and effective SRM strategy. Of particular importance in the Ukrainian context is the intellectual paradigm, which emphasises knowledge creation, critical thinking, and the cultivation of cultural and human capital. This paradigm has gained increased importance, as small businesses in Ukraine are leading educational, volunteer and awareness-raising initiatives that actively contribute to nation--building and social cohesion during a time of crisis.

Given these findings, the following recommendations are proposed.

For businesses: Embed SRM practices within strategic planning processes; ensure alignment with ESG frameworks; invest in staff training on SRM principles; prioritise partnerships that deliver social value.

For government bodies: Introduce incentive mechanisms for SRM adoption; support capacity-building programmes for SMEs and veteran entrepreneurs; integrate SRM into public procurement criteria.

For civil society organisations: Facilitate cross-sectoral collaboration; provide platforms for SRM best practice exchange; participate in independent monitoring of corporate social responsibility claims.

For academic institutions: Expand interdisciplinary research on SRM; develop practical toolkits for SRM evaluation; incorporate SRM modules into business and marketing curricula.

Future research should further explore the long-term impact of SRM practices on post-conflict economic resilience, the role of digital technologies in scaling social impact, and the measurement of intangible assets such as trust, reputation, and social capital in responsible marketing frameworks.

Based on the results of the research conducted, we have developed a set of recommendations for the main stakeholder groups involved in SRM. These recommendations are systematised in Table 10.6.

Table 10.6. Recommendations for Key Stakeholder Groups in the Field of Socially Responsible Marketing

| Category of the subject | Recommendation |
|---|---|
| Subjects of entrepreneurial activity | Define a clear SRM strategy as part of the business plan, including indicators of social, environmental, and intellectual impact.<br>Develop partnerships with educational, cultural, and environmental organisations to exchange experience and generate innovations.<br>Organise open platforms for engagement with consumers and communities (e.g., workshops, public reports, community discussions).<br>Utilise digital tools (CRM systems, AI analytics, ESG ratings) to personalise SRM activities and assess their effectiveness.<br>Invest in an internal culture of trust, inclusivity, and the development of staff soft skills. |
| Consumers | Support businesses that transparently implement SRM initiatives.<br>Participate in social programmes and public events initiated by businesses.<br>Promote examples of responsible business through social media and information campaigns. |
| The state and local governance institutions | – Introduce systematic support for SRM practices, including tax incentives, preferential loans, and government grants.<br>– Develop a national strategy for promoting SRM at the legislative level, with clearly defined criteria and reporting mechanisms.<br>– Foster cross-sectoral cooperation among business, education, science, and government.<br>– Support veteran entrepreneurship as a tool for social adaptation and economic activation. |

Source: developed by the authors.

Given the dynamic nature of the external environment and the increasing importance of social responsibility in enterprise management, it is timely and necessary to define strategic vectors for future scientific exploration aimed at deepening the understanding of the mechanisms and impacts of SRM in various economic sectors.

A priority direction for future research involves the evaluation of the long--term effectiveness of SRM implementation, particularly through the lenses of risk management, reputational capital, and the formation of sustainable competitive advantages. This approach enables scholars and practitioners to conceptualise SRM not only as an initiative related to ethical or branding, but as an integral element of corporate governance and strategic business development.

In light of current geopolitical conditions, particular attention should be paid to examining the transformation of SRM priorities under crisis scenarios, especially in the context of martial law and the full-scale Russian invasion of Ukraine. This includes investigating adaptive corporate strategies, the reorientation of social engagement efforts, and support mechanisms for vulnerable groups, including internally displaced persons, veterans, and frontline communities. These topics have both practical relevance and theoretical significance,

contributing to the development of resilient business models under extreme external stress.

Additionally, a comparative analysis of SRM models and strategies in Central and Eastern European countries, which share similar post-crisis trajectories and transitional economic histories, is of high academic value. Such studies may reveal common institutional challenges, barriers to implementation, and the potential to adapt best international practices to national socio-economic and regulatory contexts.

Equally relevant is the investigation of the relationship between SRM practices and corporate trust indicators, including customer loyalty, consumer behaviour, and brand perception. These factors are significant in both both B2C and B2B environments, where SRM has the potential to influence purchasing decisions, long-term partnerships, and market positioning. In particular, the restaurant industry represents a promising field for empirical investigation, given its direct interface with consumers, sensitivity to reputational dynamics, and growing engagement in value-based branding. Research in this sector can reveal the extent to which SRM serves as a tool for stabilising the customer base, maintaining long-term relationships, and improving resilience to crises.

In summary, the analysis underscores that socially responsible marketing in the Ukrainian restaurant industry has evolved beyond its initial framework as a matter of corporate ethics. It is increasingly regarded as a strategic imperative, driven by increasing consumer expectations, environmental volatility, and the ambition of Ukrainian enterprises to align with global standards of responsibility, innovation, and sustainable development. As such, the advancement of SRM theory and practice will play a pivotal role in shaping the future trajectory of Ukraine's business landscape.

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# PART III

# STRATEGIC MANAGEMENT, ORGANISATIONAL DEVELOPMENT AND ECONOMIC TRANSFORMATION

Chapter 11

# Procurement Logistics in Housing Cooperatives: A Comparative Study of Two Polish Regions – Świętokrzyskie and Małopolskie*

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## 11.1. Introduction

The initial phase of the physical flow of goods from external suppliers to the company originates within the supply market, which serves as the foundational environment for procurement activities. The efficiency and precision of this phase exert a substantial influence on subsequent logistics operations, directly affecting the continuity and performance of the entire supply chain. Consequently, the effective functioning of the supply department is of critical importance, as it ensures the seamless integration of procurement processes into broader logistical frameworks.

From a managerial perspective, it is essential to maintain a clear understanding of both the strategic relevance and the current condition of organisational resources and competencies within the domain of procurement logistics. This awareness is indispensable to maintain uninterrupted logistical operations and to maximise value creation for both the customer and the enterprise.

Consequently, the objective of this chapter is to assess the perceived importance and actual state of procurement logistics resources and competencies compared to market competitors, with a focus on selected housing cooperatives operating in the Świętokrzyskie and Małopolskie voivodeships. To achieve the goal, research questions were formulated.

RQ1: Do cooperatives recognise the importance and state of resources and competencies in procurement logistics compared to their competitors?

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RQ2: Is there any difference in the way cooperatives of the Świętokrzyskie and Małopolskie voivodeships evaluate the significance of specific resources and competencies in procurement logistics?

RQ3: How do housing cooperatives perceive their strategic potential in procurement logistics relative to their competitors?

In order to achieve the goal, answer research questions, an analysis was carried out based on the results of direct interviews conducted with the help of the questionnaire.

The structure of this chapter is outlined as follows: The upcoming section shows the topic of procurement logistics. In section 3, findings related to the significance and state of resources and competencies regarding procurement logistics in specific housing cooperatives from the Świętokrzyskie and Małopolskie voivodeships are provided. Section 4 contains a summary and discussion.

## 11.2. The Issue of Procurement Logistics

Procurement constitutes a fundamental function that directly influences the operational efficiency of organisations across both public and private sectors (Jama & Mohamud, 2024, p. 120). Within the broader logistics framework, procurement is responsible for the acquisition and management of materials, tools, spare parts, and essential services to organisational functioning. This role encompasses not only the physical receipt of goods and services, but also the assurance that these inputs meet predefined quality and performance criteria, thereby enabling the organisation to maintain continuity in its operations and fulfil its service commitments to end users (Hernández Ramírez & García, 2006, p. 151).

The conceptual definition of procurement, along with its operational dimensions, is presented in Table 11.1. In the context of the contemporary global economy, procurement logistics has acquired substantial strategic relevance, functioning as a cornerstone in the maintenance of efficient and resilient supply chain operations (Bányai, 2024, p. 73). This domain encompasses a wide range of activities that ensure the timely and cost-effective acquisition of goods and services necessary for organisational continuity.

Procurement processes are typically divided into two principal categories: strategic sourcing and operational procurement. Strategic sourcing involves long-term planning activities such as supply planning, supplier evaluation and selection, and contractual negotiations. In contrast, operative procurement refers to the executional aspects of the purchasing function, including material requisitioning, order tracking, and payment processing (Schiele, 2019, p. 45). This distinction reflects the dual nature of procurement logistics; wherein strategic

Table 11.1. Definitions of Procurement

| Specification |
|---|
| Procurement is the business management function that ensures identification, sourcing, access and management of the external resources that an organization needs or may need to fulfil its strategic objectives |
| Procurement exists to explore supply market opportunities and to implement resourcing strategies that deliver the best possible supply outcome to the organization, its stakeholders and customers |
| Procurement applies the science and art of external resource and supply management through a body of knowledge interpreted by competent practitioners and professionals |
| Procurement is a pro-active, strategic corporate activity to ensure a continuing supply of goods and services to enable world-class organizational performance |
| Procurement manages supply chain risks through effective negotiation of contracts, cost and price models, quality and other essential supply characteristics |

Source: (Lysons & Farrington, 2020, p. 4).

foresight must be complemented by operational precision to achieve optimal performance across the supply chain:

- Procurement planning serves a multifaceted strategic function within organisational logistics that encompasses three primary objectives. First, it facilitates the clarification of procurement goals in terms of technical specifications, cost parameters, and time frames. Second, it provides a structured framework for achieving these objectives through coordinated procurement activities. Third, it establishes evaluative mechanisms for monitoring performance against predefined targets throughout the duration of the contractual engagement (Obura, 2020, pp. 20–21). In addition, accurate supply planning constitutes a fundamental element of the supply chain strategy. Forecasting and planning activities are instrumental in enabling efficient purchasing, production scheduling, operational oversight, and inventory management. These projections serve as critical input to align procurement functions with broader organisational goals and ensure continuity in supply chain processes (Wahedi *et al*., 2023).
- Supplier selection represents a critical element in the strategic management of supply chains, exerting a direct influence on organisational performance and customer satisfaction. Suppliers serve as key partners in the value creation process, facilitating stronger links between firms and their clients. Effective supplier relationships yield a range of operational benefits, including reduced procurement costs, improved product and service quality, improved communication flows, and elevated levels of customer support (Khulud *et al*., 2023). Before initiating the supplier selection process, organisations must conduct a comprehensive evaluation of several key factors. These include the optimal number of suppliers, the size and capacity of the supplier, the geographical location, the distinction between exist-

ing and potential suppliers, and the nature of the procurement – whether direct or indirect. Such considerations are essential for aligning supplier capabilities with organisational needs and for ensuring strategic fit within the broader supply chain architecture (Shi & Zhang, 2023, pp. 1209–1210).

- Contracts represent formalised, typically well-documented, and comprehensive agreements that delineate the legally enforceable obligations and responsibilities of each party engaged in a business relationship (Zou *et al.*, 2019). Within the context of supplier engagement, the contracting process comprises three critical phases: the design of the contracting portfolio, the negotiation of initial contractual terms, and the ongoing management of the supplier relationship through contractual mechanisms (Roehrich *et al.*, 2021). These stages collectively ensure alignment between organisational objectives and supplier performance, while also serving as a governance tool to mitigate risk and improve collaboration across the supply chain.

Operative procurement is intrinsically linked to materials management, a functional area governed by the principle commonly referred to as the "Five Rs of Materials Management": ensuring that the right material is delivered at the right time, in the right quantity and quality, at the right price, and sourced from the right supplier (Dadzie & Richard, 2025, p. 116). This framework encapsulates the core objectives of materials management within procurement logistics, emphasising precision, efficiency, and cost-effectiveness. Material requirements planning within procurement logistics involves the systematic coordination of material flows, taking into account dynamic variables such as demand fluctuations, market pricing, availability, quality specifications, and delivery schedules (Dadzie & Richard, 2025, p. 116). In this context, material managers play an essential role. Their responsibilities include assessing inventory volumes, developing replenishment strategies, determining optimal stock levels across various item categories – such as raw materials, work-in-process, or finished goods – and communicating relevant data and requirements to procurement functions and the broader supply chain network. Furthermore, material management encompasses the evaluation of material quality to ensure compliance with customer expectations and production timelines, while simultaneously striving to achieve procurement objectives at the most economically advantageous terms (Dadzie & Richard, 2025, p. 116). This integrative approach reinforces the strategic importance of materials management as a driver of operational continuity and value creation within procurement logistics. Expediting practices within procurement logistics encompass a range of methodologies that vary according to industry-specific requirements, project urgency, and the prioritisation of orders within the critical path of operations. The selection of an appropriate expediting approach is

typically dependent on the time sensitivity of the order and its strategic importance to the execution of the project. Three principal forms of expediting are commonly employed:

- Desk Expediting, also known as Telephone Expediting, is the most widely adopted and cost-effective method. It involves remote communication with suppliers to monitor order status, allowing companies to track progress without incurring significant logistical costs.
- Field Editing offers more granular insight by involving on-site verification of order status, assessment of production conditions, and identification of potential disruptions. This method facilitates immediate corrective actions in response to emerging delays or operational issues.
- Resident Expediting/Inspection represents the most resource-intensive form of expediting. It involves the deployment of a dedicated expeditor to the supplier's facility, where they oversee the entire production process, review documentation, and evaluate compliance with contractual delivery timelines. Despite its higher cost, this approach provides substantial value in terms of quality assurance and adherence to the schedule (Abril, 2020).

These expediting strategies serve as critical instruments to mitigate supply chain risks, improve supplier accountability, and ensure timely fulfilment of procurement commitments.

An additional component of operative procurement is the payment process, which constitutes the final stage of the procurement-to-pay cycle. Effective management of this phase is essential to ensure financial accuracy, contractual compliance, and operational efficiency. In this context, the implementation of robust contract management systems plays a key role. Such systems facilitate the seamless coordination of procurement activities with financial operations, enabling organisations to monitor and regulate discrepancies related to invoices, purchase orders, and contractual terms (Karttunen, Lintukangas & Hallikas, 2023). By integrating payment processes within a structured contractual framework, firms can mitigate transactional risks and improve accountability throughout the procurement function.

The implementation of effective procurement methodologies yields a range of strategic and operational benefits, including cost reduction, improved product and service quality, timely delivery, strengthened supplier relationships, and increased innovation capacity. Consequently, continuous improvement of procurement techniques and approaches has become a central priority for organisations seeking to optimise performance and maintain competitive advantage (Jama & Mohamud, 2024, p. 120).

Procurement logistics management extends beyond the mere coordination of material flows; it exerts a significant influence across multiple levels of organi-

sational structure, shaping both tactical operations and strategic decision-making processes (Bányai, 2024, p. 73). Organisations equipped with well-developed procurement plans demonstrate superior adaptability, stronger alignment with overarching strategic objectives, and heightened operational resilience in the face of external disruptions and market volatility (Bányai, 2024, pp. 73–74).

## 11.3. The Importance and State of Resources and Competencies in the Field of Procurement Logistics – the Research Results

The empirical study was conducted among housing cooperative managers, who were asked to evaluate both the perceived importance and the actual condition of their organisations' procurement logistics resources and competencies compared to market competitors. The research was carried out in housing cooperatives located in the Świętokrzyskie and Małopolskie voivodeships, with participation limited to entities that consented to participate in the study. A structured interview questionnaire was used as the primary research instrument. The questionnaire was meticulously designed with regard to the number, content, format, and sequencing of the questions to ensure clarity, relevance, and analytical rigour. The sample distribution is representative, reflecting the size and structure of cooperatives classified under Section 68 of the Polish Classification of Activities (PKD) within the surveyed regions. The sampling strategy was both purposeful and random. The purpose of the project involved the selection of entities based on their operational classification according to PKD, as well as their geographical location within the designated research area.

In total, 9% of housing cooperatives in the Świętokrzyskie voivodeship and 17% in the Małopolskie voivodeship were surveyed. The results of the study are presented in Table 11.2 and illustrated in Figures 11.1 and 11.2.

Table 11.2. The Validity and State of Resources and Competencies in the Field of the Procurement Logistics

| Resources/competencies of the cooperatives in the field of procurement logistics | Małopolskie voivodeship | | Świętokrzyskie voivodeship | | Mean of the validity | Mean of the state |
|---|---|---|---|---|---|---|
| | Validity | State | Validity | State | | |
| Access to the supply sources | 3.86 | 2.43 | 4.20 | 2.20 | 4.03 | 2.31 |
| The convenience of the location in terms of supply sources | 3.79 | 2.21 | 4.20 | 2.20 | 3.99 | 2.21 |
| Knowledge of current situation on the supply markets | 3.85 | 2.23 | 4.20 | 2.20 | 4.02 | 2.22 |
| The ability to anticipate changes in supply markets | 3.62 | 2.15 | 3.67 | 2.17 | 3.64 | 2.16 |
| Knowledge and abilities of logistics staff | 3.85 | 2.15 | 4.20 | 2.40 | 4.02 | 2.28 |
| Ways of managing relationships with suppliers | 3.69 | 2.23 | 4.25 | 2.50 | 3.97 | 2.37 |

Table 11.2 cnt'd

| Resources/competencies of the cooperatives in the field of procurement logistics | Małopolskie voivodeship | | Świętokrzyskie voivodeship | | Mean of the validity | Mean of the state |
|---|---|---|---|---|---|---|
| | Validity | State | Validity | State | | |
| The range of backward integration | 4.08 | 2.23 | 4.25 | 2.50 | 4.16 | 2.37 |
| The scale of supply optimisation | 3.62 | 2.15 | 4.00 | 2.20 | 3.81 | 2.18 |
| The level of computerisation of the logistics activity | 3.77 | 2.15 | 4.25 | 2.25 | 4.01 | 2.20 |
| Mean | 3.79 | 2.22 | 4.14 | 2.29 | | |

Note: Rating scale in case of validity: 5 – extremely important, 4 – very important, 3 – quite important, 2 – slightly important, and 1 – completely unimportant.

Rating scale in case of state: 3 – better, 2 – similar, 1 – worse state of resources/competencies in comparison to competitors.

Source:

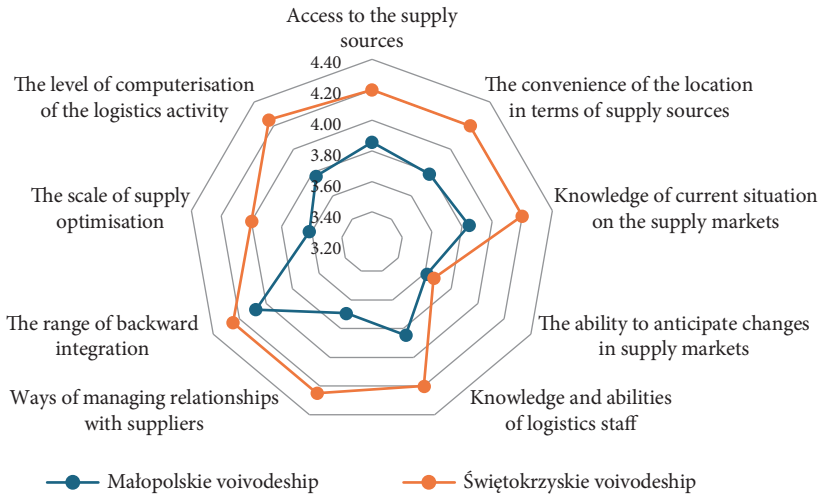


Figure 11.1. The Assessment of the Validity of Resources and Competencies in the Field of Procurement Logistics

Note: Rating scale: 5 – extremely important, 4 – very important, 3 – quite important, 2 – slightly important, and 1 – completely unimportant.

Source: own work and (Konieczna, 2013, pp. 50–51).

Taking into account the assessment of the perceived importance of resources and competencies in procurement logistics between housing cooperatives (as presented in Table 11.2 and Figure 11.1), it is evident that all identified resources and competencies are regarded highly significant by cooperatives in both voivodeships. However, the evaluation results reveal variation in the degree of importance assigned to specific elements, indicating regional differences in strategic prioritisation and operational emphasis.

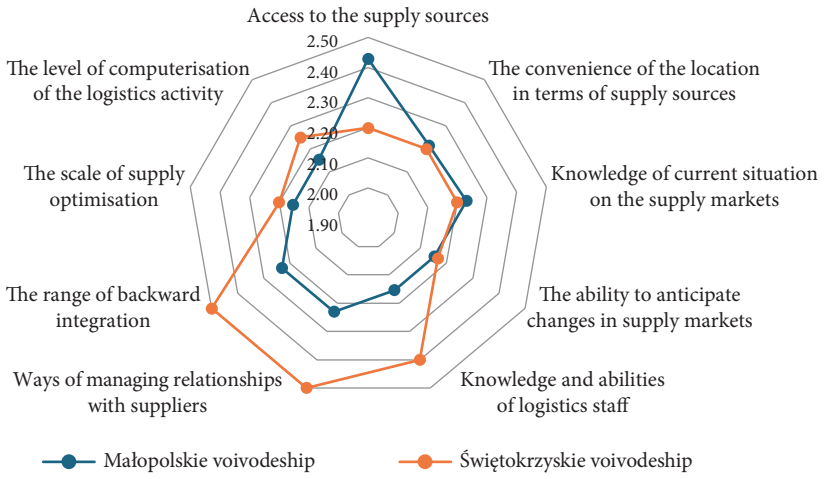


Figure 11.2. The Assessment of the State of Resources and Competencies in the Field of the Procurement Logistics

Note: Rating scale: 3 – better, 2 – similar, 1 – worse state of resources/competencies in comparison to competitors.

Source: own work.

- The highest assessed elements are: the range of backward integration (mean – 4.16), then access to the supply sources (mean – 4.03) and knowledge of the current situation on the supply markets, knowledge and abilities of logistics personnel (mean – 4.02), and the level of computerisation of the logistics activity (mean – 4.01).
- Elements rated slightly lower are: the convenience of location in terms of supply sources (mean – 3.99), ways of managing relationships with suppliers (mean – 3.97), and the scale of supply optimisation (mean – 3.81).
- The lowest assessed element is the ability to anticipate changes in supply markets (mean – 3.64).

Moreover, cooperatives from the Świętokrzyskie voivodeship were evaluated higher for all indicated resources/competencies than cooperatives from the Małopolskie voivodeship.

Taking into account the evaluation of the resources and competencies of housing cooperatives in relation to their competitors, specifically their strategic potential (Table 11.2 and Figure 11.2), it becomes apparent that cooperatives from Świętokrzyskie voivodeship assess their strategic potential higher compared to competitors than cooperatives from Małopolskie voivodeship in the case of 6 of 9 indicated resources/competencies. These are: the ability to anticipate changes in supply markets, knowledge and abilities of logistics staff, ways of managing relationships with suppliers, the range of backward integration, the scale of supply

optimisation, and the level of computerisation of the logistics activity. However, cooperatives in both voivodeships consider all resources/competencies in the sphere of procurement logistics to be slightly better than competitors. The better-rated elements are: ways of managing relationships with suppliers, and the range of backward integration (mean – 2.37), then access to the supply sources (mean – 2.31), and knowledge and abilities of logistics personnel (mean – 2.28). A few elements are assessed lower: knowledge of the current situation in the supply markets (mean – 2.22), convenience of location in terms of supply sources (mean – 2.21), and the level of computerisation of the logistics activity (mean – 2.20). The lowest-rated elements are: the scale of supply optimisation (mean – 2.18) and the ability to anticipate changes in supply markets (mean – 2.26).

## 11.4. Discussion and Conclusion

Procurement logistics constitutes a critical component of contemporary business management, encompassing the systematic coordination of the flow of raw materials, intermediate goods, and finished products from external suppliers to designated storage facilities or directly to production sites. Its principal objective is to ensure the timely and cost-effective fulfilment of organisational material requirements, thereby facilitating uninterrupted production processes and consistent market delivery.

To achieve these operational goals, it is imperative to have a comprehensive understanding of the internal resources and competencies of the organisation within the procurement logistics domain, as well as their position relative to industry competitors. This insight enables the formulation and implementation of targeted strategies that improve logistic efficiency and contribute to the creation of value for both the customer and the enterprise. Without this evaluative foundation, efforts to optimise procurement performance risk being misaligned with market realities and organisational capabilities.

An analysis of the empirical data, contextualised by the research questions, reveals that cooperatives demonstrate a clear recognition of the strategic relevance of their internal resources and capabilities in procurement logistics, particularly in relation to their competitive positioning. Respondents representing cooperative entities systematically assessed the resources and competencies of their organisations, attributing differentiated levels of importance to each evaluative criterion.

The findings indicate that cooperatives across both examined regions acknowledge the critical role of specific capabilities, namely expertise in identifying supply sources, awareness of prevailing market conditions, and the cultiva-

tion of supplier relationships. However, despite this strategic awareness, there is a discernible gap in translating these capabilities into tangible operational advantages. This underscores the pivotal function of informational assets and human capital within procurement frameworks, corroborating previous scholarship that highlights the strategic utility of market intelligence and personnel expertise (Stock & Boyer, 2009; Christopher, 2016).

A comparative regional analysis reveals notable differences in the perceived significance and actual condition of procurement-related resources and competencies between cooperatives located in the Świętokrzyskie and Małopolskie voivodeships. Świętokrzyskie cooperatives report marginally higher average scores in both perceived validity (4.14 vs. 3.79) and actual resource condition (2.29 vs. 2.22), suggesting a relatively more effective deployment of existing assets. These findings align with regional development literature, which posits that smaller or less economically diversified regions may offset structural limitations through enhanced supplier engagement and adaptive procurement methodologies.

Nevertheless, the average condition scores in both regions tend to cluster around the "similar" or "worst" categories when compared to competitors, indicating a pressing need for internal capacity-building and the implementation of systematic benchmarking practices. The consistently elevated importance ratings for logistics personnel expertise and market awareness resonate with broader discourses on supply chain resilience (Christopher & Peck, 2004; Wieland & Wallenburg, 2013), which identify human capital and market intelligence as foundational for competitive advantage. In contrast, relatively low condition scores in these domains suggest insufficient investment in professional development, analytical tools, and strategic foresight – deficiencies frequently observed in procurement systems within emerging or transitional economies (Trent & Monczka, 2003).

This study contributes to the body of literature on regional procurement dynamics by empirically illustrating the interplay between infrastructure, human capital, and relational networks in shaping procurement logistics outcomes. The results reinforce the notion that regional disparities in supply chain competencies are not merely attributable to firm-level strategic choices, but are deeply embedded within broader socio-economic and infrastructural contexts.

Furthermore, the low condition ratings for backward integration and supply optimisation reflect structural constraints endemic to cooperative and SME-dominated sectors, where limitations in capital intensity and scale economies prevail. These observations are consistent with Porter's (1985) assertion that vertical integration is less viable in fragmented market environments, and with

contemporary EU regional analyses indicating that integration strategies are more commonly adopted in metropolitan or export-oriented clusters.

Empirical evidence suggests several actionable pathways for improving procurement logistics performance:

- Targeted training initiatives: Investment in specialised logistics training and inter-organisational knowledge exchange programmes could significantly elevate resource quality and staff competencies.
- Digitalisation of procurement processes: The adoption of digital tools, including demand forecasting and inventory management platforms, should be integrated into cooperative support mechanisms to improve responsiveness and operational agility.
- Cluster-based development strategies: The formation of localised procurement clusters and the promotion of inter-cooperative collaboration may foster more equitable competitive conditions across regions and facilitate the realisation of scale efficiencies.

This study is subject to certain limitations, primarily related to its geographic scope. The research was confined to housing cooperatives located in the Świętokrzyskie and Małopolskie voivodeships, which may constrain the generalisability of the findings to other regions. As procurement logistics practices and perceptions can vary significantly in different administrative and economic contexts, regional focus presents a boundary to broader applicability.

To address this limitation, future research should aim to expand geographic coverage by including housing cooperatives from additional voivodeships. This approach would enable a more comprehensive assessment of regional differences in the awareness, significance and development of procurement logistics resources and competencies. Comparative analyses in various territorial units could provide deeper insights into structural, organisational, and strategic variations, thus enhancing the robustness and relevance of the findings for both academic inquiry and practical application.

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Chapter 12

# Strategic Analysis of a Road Freight Transport Company Specialising in Fresh Products: A PESTEL-SWOT Approach

Magdalena Satora

## 12.1. Introduction

The carriage of fresh products such as fruit, vegetables, meat and fish is one of the most demanding areas in road transport. These products are extremely sensitive to environmental conditions and delivery time. Any irregularities during transportation can significantly affect their quality and consumer safety (Satora & Szkoda, 2019; Negi & Trivedi, 2021). Safety in food transport can be defined as the confidence that food and its ingredients, after being transported to their destination, will be suitable for consumption, which means that there will be no unacceptable risk of food degradation (Rymarz, Dmowski & Niewczas, 2010). A key factor is maintaining an unbroken cold chain and appropriate hygiene standards at every stage of the process.

To meet quality requirements and ensure safety, transport companies must face numerous operational and organisational challenges (Satora, Gajewska & Szkoda, 2019; Satora, 2021). These include compliance with legal acts regulating food transport, the selection of appropriate vehicles, and the need to maintain appropriate temperatures in the cargo space. Fresh products, as biologically active matter, require the use of specialised refrigerated vehicles that allow precise control over transport conditions (Górecka-Orzechowska & Raczek, 2012).

Road transport remains the dominant mode of transport of freight in Poland. According to data from the Central Statistical Office (CSO, 2023), road transport represented more than 87% of the transport market in 2023. A significant amount of transported goods were food products, including fresh fruits and vegetables, which constituted 20.1% of the freight structure (based on two product categories from the Central Statistical Office: (1) products of agriculture, hunting and forestry; fish and other fishery products, and (2) food, beverages

and tobacco). Over 300 thousand tons of food were transported, with a substantial portion carried under controlled temperature conditions. This confirms the growing complexity and importance of the refrigerated transport sector. The dynamic development of this segment is also reflected in the number of registered specialised vehicles. In 2023, there were 101,839 trucks with isothermal, refrigerated, or cold storage bodies registered in Poland (an increase from 99,617 in 2022), 2,690 trailers (up from 2,639), and 75,098 semi-trailers (up from 69,694). These figures confirm that the transport of fresh products is becoming a crucial link in both national and international food supply chains.

Taking into account the increasing expectations of the market, the increasingly stringent legal requirements and the competitive pressure, companies in the fresh produce transport sector must base their decisions on a thorough analysis of both external factors and internal resources. In this context, it becomes essential not only to respond to changes on an ongoing basis but also to participate in long-term planning of adaptive and developmental actions (Khasanov, 2023).

Therefore, it is necessary to use strategic management tools that facilitate the identification of key external factors and allow an assessment of the company's potential and limitations (Franke, Edlund & Oster, 1990; Susanto *et al*., 2023). This chapter adopts an analytical approach based on two complementary methods: the PESTEL analysis, which helps identify the main macroenvironmental factors (political, economic, social, technological, environmental, and legal) (Yüksel, 2012; Siddiqui, 2021) and the SWOT analysis, which enables the evaluation of a company's strengths and weaknesses, as well as opportunities and threats from the market environment (Gürel & Tat, 2017; Puyt, Lie & Wilderom, 2023). The use of both tools allows for a more comprehensive understanding of the strategic position of a transport company and the development of recommendations aimed at increasing its competitive resilience (Petrauskiene *et al*., 2020).

Despite numerous publications on strategic management, there are a limited number of studies that combine macro-environmental assessment (PESTEL) with firm-level strategic assessment (SWOT) in the context of companies specialising in the transport of fresh products.

The chapter aims to conduct a strategic assessment of the external environment and internal position of a refrigerated transport company using the PESTEL and SWOT methods, and to formulate recommendations supporting the development of competitiveness in a changing environment. The analysis is based on a real-world case study of a company operating in international road transport of fresh products.

## 12.2. Operational and Organisational Challenges in Road Transport of Fresh Products

The transport of fresh products requires the maintenance of the highest quality and hygiene standards. The complexity of the process is due to the biological properties of the cargo and strict legal regulations (Wasiak & Leleń, 2018), as well as technical requirements. Among the main operational and organisational challenges in this area are the necessity to comply with formal and legal regulations, the selection of appropriate means of transport, the maintenance of proper conditions in the cargo space, and the seasonality of operations.

### 12.2.1. Compliance with Formal-legal Requirements

The fundamental condition for carrying out the transport of perishable products is the compliance of transport operations with national and international legal regulations. In this context, the following documents are of key importance:

- Agreement on the International Carriage of Perishable Foodstuffs (ATP) – this document contains standards and requirements that must be respected during the transport of perishable food products from the moment of loading to unloading in a designated place in order to ensure the high quality of goods, their healthiness, and properties (Journal of Laws of 2015, item 667). The ATP describes articles that can be referred to as perishable food products and the temperatures that must be met during the transport and storage of deep-frozen and frozen products. Temperature is one of the most crucial factors that ensures the freshness of products, therefore, the cooling unit has the obligation to maintain or lower temperatures in the vehicle body.
- Hazard Analysis and Critical Control Points system (HACCP) is a preventive concept that aims to ensure food safety through systematic identification, analysis, and control of potential hazards throughout the food supply chain. It involves a detailed monitoring of food products and the evaluation of possible threats – biological, physical, and chemical – in order to protect food from contamination or deterioration. The HACCP system covers every stage from the acquisition of raw materials, through the preparation, processing, modification, packaging, and storage of food, to its distribution, and final placement on the domestic or international market (European Commission, 2004).
- Rapid Alert System for Food and Feed (RASFF) – the main task of this system is fast and the earliest transmission of information on hazards found

in food products, food intended for animals, or materials that have been in contact with these products. This is a particularly important task to ensure the safety and health of people, animals and the environment (Main Sanitary Inspectorate, 2025).

Compliance with the above regulations constitutes not only the basis for the legal operation of the company but also a prerequisite for maintaining consumer trust and ensuring their safety.

### 12.2.2. Selection of Appropriate Means of Transport

The transport of fresh products requires the use of specialised vehicles that allow for controlled transport conditions. Depending on the characteristics of the product and the specific temperature requirements, the following are used (Journal of Laws of 2015, item 667):

- vehicles with a refrigeration mechanism, so-called refrigerators,
- vehicles with heating equipment,
- tanker vehicles,
- isothermal transport vehicles, the so-called isotherms,
- vehicles with a cold tank, so-called ice-makers.

In Table 12.1 the characteristic of the transport method chosen for transporting fresh products by road is presented.

Table 12.1. Selected Characteristics of the Chosen Types of Transport Used for the Road Transport of Fresh Products, Including Fresh Fruit and Vegetables

| Type of means of transport | Characteristics |
|---|---|
| Vehicles with a refrigeration mechanism, so-called refrigerators | – has an individual or general cooling mechanism<br>– mostly used for transporting food products<br>– the maximum load is 22 tons<br>– the smallest possible temperature to obtain in the refrigerator is –35$^0$C (used to transport deep-frozen articles)<br>– standard dimensions of the cargo area are in the range of 82–92 m$^3$<br>– the body must be equipped with a system enabling the temperature inside the refrigerator to be lowered if the ambient temperature is +30$^0$C<br>– maintains the right temperature on the entire route<br>– standard width of the body is 2.42–2.45 m<br>– standard body height is 2.45–2.7 m<br>– standard length of the body is 13.2–13.5 m<br>– vinyl or polyurethane foam, as well as foamed polystyrene and cork are used for insulation<br>– the body is made of thermal insulation boards<br>– the whole structure of the cold store is connected by means of properly shaped locks, which ensures proper heat transfer of the corners and other elements of the refrigerator |

Table 12.1 cnt'd

| Type of means of transport | Characteristics |
|---|---|
| Isothermal transport vehicles, so-called isotherms | – walls, doors, floor and body roof are made of thermo-insulating materials<br>– this type of vehicle is used for the transport of perishable foodstuffs<br>– transported goods must be in refrigerated or frozen form<br>– used mainly for transportation of goods requiring temperature in the range from $0^{o}$C to $+16^{o}$C<br>– ensures adequate heat exchange between the middle of the trailer and the ambient temperature<br>– must ensure a certain temperature of the products, even if there is a negative temperature in the environment<br>– thermo insulated trailer<br>– the trailer does not have a refrigeration unit |

Source: own work based on (Journal of Laws of 2015, item 667).

The choice of means of transport has a direct impact on the durability and quality of products, as well as on the compliance of the processes conducted with transport and sanitary regulations.

### 12.2.3. Maintaining the Appropriate Temperature

Fresh products must be transported within strictly defined temperature ranges specific to their type. Table 12.2 presents the recommended temperatures for selected types of fruits and vegetables.

Table 12.2. Required Transport Temperatures in Accordance with the ATP Convention for Selected Types of Food Products

| Product | Required temperatures |
|---|---|
| Fruits | |
| Lemon | $10–11^{o}$C |
| Golden apple | $1.5–2^{o}$C |
| Strawberry | $0^{o}$C |
| Watermelon | $10–12^{o}$C |
| Pear | from –1.5 to $0.5^{o}$C |
| Plum | from –0.5 to $0^{o}$C |
| Tangerine | $4–8^{o}$C |
| Cherry | from –1 to $0^{o}$C |
| Green banana | $13–15^{o}$C |
| Vegetables | |
| Cabbage | $0–1^{o}$C |
| Champignon | $0^{o}$C |
| Early season potato | $10–15^{o}$C |
| Late season potato | $4–5^{o}$C |

Table 12.2 cnt'd

| Product | Required temperatures |
|---|---|
| Cucumber | 8–11°C |
| Parsley | 0–1°C |
| Ripe tomato | 8–10°C |
| Onion | –1–0°C |
| Pepper | 7–10°C |
| Carrot | 0–1°C |

Source: own work based on (Journal of Laws of 2015, item 667).

Maintaining the appropriate temperature requires not only suitable vehicles but also the use of temperature measurement and recording systems, real-time monitoring of conditions, and emergency procedures in case of the failure of refrigeration unit. Any deviations from the standards can lead to the spoilage of products, complaints, and financial losses.

### 12.2.4. Seasonal Fluctuations in Supply and Demand

The transportation sector for fresh products is characterised by a high degree of seasonality. On the one hand, it depends on the harvesting cycles and supply in the countries of origin. On the other hand, it is influenced by increased demand during specific times of the year, such as holidays, vacations, or the beginning of the growing season (Świderski, 2019; Satora, 2021). This results in uneven operational workloads for companies, both in terms of the number of orders and in terms of the utilisation of fleet and human resources. Seasonality requires flexible planning, the ability to respond quickly, and effective cost management during periods of low utilisation.

Given the specific nature and complexity of the operational challenges posed by the transport of fresh products, a systematic strategic analysis is essential. This will allow for a better understanding of the factors influencing the functioning of a company operating in this sector, as well as the identification of areas requiring improvement. The following section presents the research methodology used, including analytical tools that allow a comprehensive assessment of both the external environment and the internal resources of the transport company.

## 12.3. Material and Methods

Strategic analysis of a company can be conducted using various methods, such as PEST, PESTEL, SWOT, SPACE, or Porter's Five Forces (Kałkowska *et al*., 2010; Qehaja, Kutllovci & Pula, 2017). Each of these approaches offers

valuable information, but their importance varies depending on the context of the industry. Porter's Five Forces, for example, focus on competitive dynamics (Pangarkar & Prabhudesai, 2024) but pay less attention to regulatory and environmental pressures, which are crucial in the refrigerated transport sector. Similarly, the SPACE matrix requires extensive quantitative data and analytical resources that are often unavailable to medium-sized enterprises (Heruddin, Suryaningsih & Dewanto, 2025). By contrast, the combined application of PESTEL and SWOT offers both analytical depth and practical accessibility. PESTEL enables the systematic identification of macro-environmental factors – political, economic, social, technological, environmental, and legal – that strongly shape EU refrigerated logistics, particularly under strict frameworks such as ATP or HACCP (Yüksel, 2012; Siddiqui, 2021). SWOT then links these external drivers with company internal resources and constraints, generating practical recommendations tailored to their capabilities (Gürel & Tat, 2017; Puyt, Lie & Wilderom, 2023). This complementarity is particularly relevant for medium-sized firms, which require strategic tools that are rigorous but manageable in practice. The integration of PESTEL and SWOT is also well documented in the literature and has been successfully applied in logistics and sustainability research (Sansa, Badreddine & Romdhane, 2021; Christodoulou & Cullinane, 2019; Uztürk & Büyüközkan, 2023). For these reasons, this chapter adopts PESTEL and SWOT as the most appropriate methodological framework for assessing the strategic position of a refrigerated transport company.

### 12.3.1. Description of the Company Analysed

The subject of the analysis was a medium-sized transport company that has specialised for more than 10 years in the road transport of fresh food products, such as fruits and vegetables. The company mainly performs international transport on the routes Poland–Germany–France–Spain, operating a fleet of over 60 refrigerated and insulated trucks. It employs approximately 120 people, including 85 drivers, and has its own technical facilities and cold transshipment storage. The company's operations are conducted in accordance with current transport and sanitary regulations. Due to increasing competition and evolving climate and technological regulations, the company is facing the need for a strategic definition of its development directions and for adapting its services and processes to changing market requirements.

### 12.3.2. Research Procedure

The strategic analysis of a company engaged in the road transport of fresh products using the PESTEL and SWOT methods was conducted based on the procedure presented in Figure 12.1.

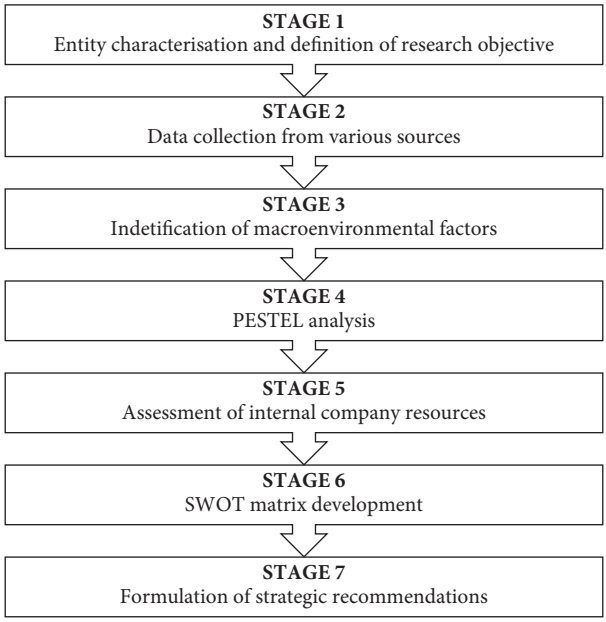


Figure 12.1. Stages of Strategic Analysis of a Transport Company Using PESTEL and SWOT Methods

Source: own work.

The first stage concerned the characterisation of the entity analysed and the definition of the research objective. At this stage, the scope of the analysis was specified, the specifics of the road transport sector for fresh products were outlined, and the main organisational and operational challenges faced by the company were identified. The second stage involved the collection of data necessary for conducting an in-depth analysis. These data came from both primary and secondary sources. Primary data was obtained through semi-structured interviews with managers, drivers, and technical personnel. Secondary data included internal company documentation (fleet statistics, cost and maintenance reports), industry publications, official statistics from the Central Statistical Office, and academic literature. The data covered the period 2023 to 2024 and focused on the company's international operations along routes connecting Poland, Germany, France and Spain. The collected material was then qualitatively analysed. This approach made it possible to reliably capture the specific characteristics of the company's operations and provided a solid foundation for further strategic analysis. In the third stage, the focus was on identifying macro-environmental factors through the analysis of legal regulations, EU policies, reports on technology, the environment, and the economy, as well as social trends. The identified variables formed the basis for the fourth stage, the PESTEL analysis, in which

specific factors were categorised into six groups: political, economic, social, technological, environmental, and legal (Buran, 2024). The fifth stage focused on the analysis of company internal resources. An evaluation of operational, technical, and logistic activities was performed, as well as available human and infrastructural resources. The sixth stage involved the development of a SWOT matrix, in which the company's strengths and weaknesses were combined with opportunities and threats arising from the external environment. Elements previously identified in the PESTEL analysis were directly used in the formulation of the external part of the SWOT. The seventh final stage consisted of formulating strategic recommendations based on the findings of the previous steps. The proposed development directions and improvement measures were intended to increase the company's operational flexibility, improve competitiveness, and improve its alignment with evolving market and regulatory conditions.

## 12.4. Results

The strategic analysis was carried out according to the seven-stage procedure previously outlined, combining both external and internal perspectives to evaluate the position of a medium-sized road transport company specialising in international freight of fresh food products. Based on the collected data, a PESTEL analysis was first conducted to identify key macro-environmental factors affecting the refrigerated transport sector. These factors were then integrated with internal resource assessments to construct a comprehensive SWOT matrix.

Table 12.3. Macroeconomic Environmental Factors According to PESTEL Analysis

| PESTEL factor | Key external drivers |
|---|---|
| Political (P) | Existing EU regulations on road transport, EU common transport policy, sanitary and phytosanitary regulations, Green Deal and decarbonisation policies in the transport sector |
| Economic (E) | Rising operational costs (fuel, maintenance, parts), currency exchange rate volatility, inflation in EU countries, seasonality of demand for fresh food transport |
| Social (S) | Changes in consumption patterns, increased demand for fresh food, shortage of professional drivers, pressure to improve working conditions |
| Technological (T) | Development of telematics systems and automation in logistics processes, innovations in refrigeration units and temperature monitoring, digitalisation of the supply chain |
| Environmental (E) | Need to reduce $CO_2$ emissions, implementation of emission standards (e.g., EURO 6), initiatives for sustainable transport and green logistics |
| Legal (L) | Compliance with HACCP, ISO 22000, labour law, drivers' working time regulations, sanitary requirements in food transport |

Source: own work.

The PESTEL analysis revealed several significant external drivers that impact the operations of the road transport company under study. These factors were categorised into six dimensions – political, economic, social, technological, environmental and legal – reflecting the macro-environmental forces that influence the firm's strategic positioning. The results of the analysis are summarised in Table 12.3.

Based on external factors and analysis of company internal resources and competencies, a SWOT analysis was conducted, which allowed for the identification of key strengths and weaknesses of the company, as well as opportunities and threats arising from the environment. The results of the SWOT analysis are presented in Table 12.4.

Table 12.4. SWOT Matrix for the Analysed Transport Company

| | Helpful | Harmful |
|---|---|---|
| Internal | STRENGTHS<br>– well-established fleet of over 60 vehicles<br>– experienced workforce with 85 professional drivers<br>– compliance with ISO 22000 and HACCP standard<br>– own technical and refrigeration facilities<br>– strong reputation in the international fresh food transport market | WEAKNESSES<br>– high operating costs due to fuel and maintenance<br>– limited process automation<br>– dependence on international routes, vulnerable to border restrictions<br>– challenges in recruiting and retaining drivers<br>– limited investment in alternative fuel technologies |
| External | OPPORTUNITIES<br>– increasing demand for fresh food transport across EU markets<br>– advances in refrigeration and telematics technology<br>– expansion into new markets within the EU<br>– growing consumer preference for fresh, high-quality products<br>– availability of EU funds for green transport modernisation | THREATHS<br>– rising fuel prices and inflation impacting costs<br>– stricter environmental regulations (e.g., $CO_2$ emissions limits)<br>– competition intensification in the fresh food transport sector<br>– regulatory changes affecting cross-border transport<br>– labour shortages, especially professional drivers |

Source: own work.

As a result of the PESTEL and SWOT analyses, it can be concluded that the transport company operates in a complex and dynamically changing macroeconomic environment. The PESTEL analysis enables the identification of key external factors that significantly affect company operations. The most important include:

- EU regulations concerning transport and decarbonisation, with the upcoming Euro 7 emission standards requiring modernisation of the fleet,
- increasing operational costs, as fuel expenditures increased by 23% between 2023 and 2024,

- a shortage of professional drivers, with recruitment times doubling from 4 to 8 weeks between 2023 and 2024, reflecting a national shortage of approximately 29,000 drivers (IRU, 2024),
- technological advances in telematics and refrigeration systems, although only 40% of the fleet is currently equipped with advanced solutions,
- increasing environmental and legal requirements related to food transport.

The SWOT analysis revealed that the company possesses strengths, including a well-established fleet of more than 60 vehicles and an experienced team of 85 professional drivers. In addition, it operates in compliance with ISO 22000 and HACCP standards, has internal technical and refrigeration facilities, and has a well-established reputation in the international fresh food transport sector. Weaknesses include high operating costs driven by fuel and maintenance, limited process automation, and reliance on international routes, making the company vulnerable to restrictions. In addition, there are persistent challenges in recruiting and retaining drivers and limited investment in alternative fuel technologies. Opportunities include increasing demand for fresh food transport across EU markets, advances in refrigeration and telematics technology, expansion into new EU markets, growing consumer preference for high-quality products, and the availability of EU funds for green transport modernisation. Threats include rising fuel prices and inflation, stricter environmental regulations (e.g., $CO_2$ emission limits), intensifying competition in the refrigerated transport sector, regulatory changes affecting cross-border operations, and persistent shortages of professional drivers.

The integration of the PESTEL and SWOT findings reveals important interactions. The company's strong fleet, reputation, and compliance with standards can be leveraged to capitalise on opportunities such as EU funding and the growing demand for high-quality products. At the same time, experienced workers and internal technical facilities help mitigate the risks associated with stricter environmental regulations and rising costs. Weaknesses, such as limited process automation and dependence on international routes, can be addressed by seizing opportunities for technological upgrades and market diversification. However, high operating costs combined with inflation and increases in fuel prices, as well as limited investment in alternative fuel technologies, reinforce exposure to external threats such as environmental regulations and labour shortages, making cost-control and human resource strategies essential.

Therefore, the strategic position of the company can be described as stable, with the potential to strengthen its competitive advantage by aligning its strengths with market opportunities. Investing in telematics and refrigeration technology is recommended to improve efficiency. In addition, the implementa-

tion of training and motivation programmes can be applied to counteract driver shortages and the greater use of EU funds for fleet modernisation. At the same time, close monitoring of regulatory changes and a flexible approach to adapting strategy are crucial for maintaining competitiveness and ensuring long-term growth in the fresh food transport sector.

## 12.5. Conclusions

The chapter discusses operational and organisational challenges related to the transportation of fresh products, including maintaining adequate transport conditions and the seasonality of demand. The use of PESTEL and SWOT tools allowed the identification of factors influencing the company's functioning. A strategic analysis revealed the company's strengths, including a modern fleet and qualified personnel, as well as weaknesses such as high operating costs and staffing difficulties. Opportunities were identified in the growing demand for fresh products and access to funding for ecological innovations, while threats included increasing regulatory requirements and pressure to reduce costs. Based on these insights, investments in modern technologies, employee training programmes, and eco-innovations were recommended to enhance competitiveness and meet environmental standards.

In summary, the conducted research highlights several key findings. Rising operating costs and fluctuating fuel prices constitute the main economic pressures, while labour shortages pose a critical threat to the company's stability. At the same time, investments in telematics and eco-innovations can significantly improve efficiency and regulatory compliance, particularly when supported by EU funding. The increase in demand for fresh food products, such as fruits and vegetables, in EU markets further justifies the need for modernisation and diversification.

However, the study has certain limitations. The analysis was focused on a specific company and sector, which can limit the generalisability of the findings to other contexts or regions. Future research could explore comparative analyses across different transport companies or regions, incorporating more extensive empirical data, as well as examining the impact of technological innovations and sustainability practices on operational efficiency and customer satisfaction in the transport of fresh products.

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Chapter 13

# Succession Maturity in Family Businesses: An International Comparative Perspective

Agnieszka Thier

## 13.1. Introduction

Family businesses are the oldest and most widespread form of economic activity. They are the most numerous among commercial enterprises, although the tendency to separate ownership from management – particularly through the establishment of joint-stock companies with many shareholders – often leads to a reduction or complete loss of the family's stake in corporate ownership. Family businesses dominate in countries of the market economy, accounting for approximately 60% to 90% of all enterprises. In Poland, family businesses represent around 45–60% of all companies (Siuta-Tokarska *et al*., 2023).

The essence of a family business lies in the intersection of two spheres: the family and the enterprise (Jeżak, Popczyk & Winnicka-Popczyk, 2004, p. 20). It represents a convergence of two distinct environments – family life and business activity. The family, as a social institution, is primarily connected to the functioning of the household, while the enterprise is an economic unit characterised by a defined legal, organisational, and financial structure, created to produce goods or provide services to customers. It is typically composed of a team equipped with the means of production with the aim of generating profit and meeting societal needs. These elements are consistent with definitions commonly found in the economic and sociological literature. Some authors offer alternative, yet complementary definitions. For example, Adamska (2014, p. 6) describes an enterprise as "a set of tangible and intangible components poised to conduct an economic activity." Despite their differences, family and business environments are interconnected and mutually influential. The combination of family life with professional involvement can enable better utilisation of passion, talent, and accumulated knowledge. However, it may also blur the boundaries between

private and professional life, potentially giving rise to conflicts and challenges that are less common in non-family enterprises (Jeżak, 2016, p. 54; Sobiecki, 2014, p. 13).

The concept of a family business is intuitively understood in everyday language; however, it is more difficult to define and identify in statistical records and academic publications. This challenge arises from the various organisational and legal forms such enterprises may assume. They typically do not indicate their family character in their name, and the difficulty in identifying their ownership structures. Moreover, there is no universally accepted definition of a family business, as most legal systems do not formally recognise such a category. In the literature, various operational definitions are used, based on easily observable criteria (Donelly, 1964, pp. 93–100; Donckels & Fröhlich, 1991, p. 153; Litz, 2008, pp. 217–236; Zellweger, 2017, p. 22). The most commonly applied criteria include the following:

- the family owns more than 50% of the business or holds controlling shares,
- at least one family member plays a significant role in the management of the enterprise, and at least one or two family members are involved in its operation (not necessarily under formal employment contracts),
- the business owner or founding family explicitly intends to transfer ownership or leadership to the next generation (succession planning).

These criteria reflect the multidimensional nature of family firms, which combine elements of ownership, management, and intergenerational continuity. The ethical values and attitudes demonstrated by business owners, their families and employees are important components in defining family enterprises. These values include responsibility for business, loyalty, integrity, diligence, and other elements of organisational culture. Another criterion – particularly emphasised in the United States – is the continuity of family control over the business for at least two generations (Conway Center for Family Business, 2025).

## 13.2. Succession Maturity: Concept and Position within Organisational Maturity

In this chapter, succession maturity is conceptualised as an emergent and integrative construct that gauges the collective readiness of the owner, successor, and the organisation for an intergenerational transfer. It extends simple "preparedness" by integrating formal preparations (e.g., governance mechanisms, ownership/control instruments, documented plans) with relational and cultural preparedness embedded in the family-firm system (roles, expectations, communication). This conceptualisation aligns with established family-business

perspectives on life cycles and transgenerational continuity (Gersick *et al*., 1997; Howorth & Robinson, 2020; Zellweger, 2017) and with recognised governance guidance for family enterprises.

Conceptually, succession maturity is positioned within the broader tradition of organisational maturity models that assess a system's ability to institutionalise and continuously improve key processes (e.g. CMMI, BPMM, PEMM). The notion of maturity itself is therefore not new in management studies; its application here is to the family-firm context as succession maturity, emphasising intergenerational ownership, governance, and leadership continuity (Brajer-Marczak, 2014; Gałuszka, 2011; Adamczyk, 2018; Zellweger, 2017). These frameworks legitimise a staged, capability-focused view and motivate a multidimensional treatment of maturity in family firms, while prior reviews warn against overly mechanistic applications and call for sensitivity to context and culture – precisely where a family-business lens adds value (Gałuszka, 2011; Brajer-Marczak, 2014).

This research lays the conceptual foundation for a theory-informed model and a measurement approach to succession maturity. The contribution proceeds from a qualitative synthesis toward the specification of an instrument. The construct is advanced as a basis for practical diagnostic tools – subject to content validation and reliability testing – and to identify priority areas for improvement in family firms (Czakon, 2019).

As a heuristic scaffold for future measurement, four mutually reinforcing domains are proposed as the core of operationalisation: strategic (embedding succession in strategy and growth logic), legal (ownership/control instruments and continuity vehicles), operational (professionalisation, structures, governance) and emotional (family cohesion, trust, conflict management). The empirical vignettes provided later in the chapter serve as contributing evidence for these domains and prepare the ground for subsequent specification and validation (Davis & Lombard, 2019; Zellweger, 2017; Howorth & Robinson, 2020).

Succession maturity is an intentionally new and heuristic category for family-business studies. It risks reification and excessive formalism if it is decoupled from family dynamics and institutional context; analogous critiques have been advanced for process-maturity models in general. Consequently, succession maturity is advanced as a guiding analytical lens – open to refinement, cross-cultural validation, and triangulation – rather than a finished taxonomy (Gałuszka, 2011; Brajer-Marczak, 2014; Czakon, 2019).

## 13.3. Research Design and Objectives

*Objective and Main Hypothesis*

This study examines how leading family firms maintain multi-generational continuity by comparing practices across Japan, Germany, the United States, and Poland. Building on secondary sources and concise case vignettes drawn primarily from the EY Family Business Index Top 500, the chapter advances the hypothesis that higher succession maturity – understood as a composite of strategic, legal, operational and emotional readiness – coincides with greater longevity and resilience. Sector-level associations and supportive legal-institutional frameworks are expected to reinforce such maturity in observable ways.

*Research Questions*

RQ1: How do leading family firms show succession maturity along strategic, legal, operational, and emotional dimensions?

RQ2: How do country-specific institutions (e.g., governance norms, inheritance, and foundation law) shape observe succession practices?

RQ3: Which cross-national regularities emerge among top-500 family firms and what do they imply for a transferable maturity framework?

*Definitions and Operationalisation*

Following policy and governance guides, a family firm is treated as one in which a family exercises significant ownership and influence and expresses an intention of intergenerational continuity. For analytical consistency, we align with widely used European Commission and governance handbooks. Succession maturity is outlined (to be fully operationalised in subsequent research) as four interlocking domains:

- strategic (succession embedded in strategy; next-generation development linked to growth/innovation),
- legal (ownership/control instruments, e.g., wills, trusts, family foundations),
- operational (professionalised structures, boards, risk/compliance),
- emotional (family cohesion, shared values, conflict management, and communication).

*Research Design and Case Selection*

The study employs comparative desk research combined with directed content analysis and brief case studies that mirror the structure of the empirical sections of the chapter. The population frame is the EY Family Business Index (Top 500); therefore, inclusion criteria replicate the EY approach to family control/influence and intergenerational intent. No additional exclusion

criteria were imposed beyond the availability of credible secondary material. The temporal window is 2016–2025, allowing triangulation with recent advisory surveys and legal developments relevant to succession (e.g., the rise of family foundations in Poland).

*Two-layer Evidence Strategy*

The evidence base follows two-layer logic. Layer A (Contextual Frame) uses the EY Family Business Index (top 500) to characterise the population context and to anchor the cross-country comparison (Japan, Germany, United States, Poland). Layer B (Illustrative Heritage Vignettes) comprises historically long-lived family firms that may fall outside the top-500 revenue threshold but exemplify configurations of practices associated with continuity. Layer B is used only for qualitative illustration; no claims about representativeness or prevalence are made on the basis of these vignettes (note: where a firm appears in Layer B but not in the EY Top 500, it is treated as a heritage case for illustrative purposes; aggregate references to size, sectoral structure, and regional distribution are derived from the EY frame).

*Sources and Techniques*

We synthesise: 1) the scholarly literature on family firms and transgenerational continuity, 2) practitioner reports and cross-regional surveys (EY, KPMG/STEP, PwC CEE/Poland), and 3) policy/legal documents and governance manuals (EC, IFC). Texts were screened for explicit evidence on ownership – governance continuity, leadership pipeline, and association/industry context. A directed content analysis used *a priori* codes derived from the four succession-maturity domains to guide the extraction of comparable evidence between countries and cases.

*Coding Scope by Layer*

Coding procedures were applied to both layers with different inferential scopes. For Layer A, directed content analysis supported cross-country patterning anchored in the top-500 frame. For Layer B, code application was limited to extracting practice configurations and institutional touchpoints; results inform theorising but are not extrapolated as population frequencies.

*Indicators and Coding Sheet (Scoping for Future Work)*

Consistent with the scope of the chapter, we sketch (rather than apply) an indicator family to be formalised in subsequent studies (e.g., presence of a written succession plan; family constitution/shareholders' agreement; next-generation role preparation; board structures; communication routines; and use of legal vehicles such as family foundations). A coding sheet and scoring rubric will be developed in a follow-up project.

*Analytical Procedure*

Sampling: Anchoring the comparison in Layer A – identifying contextual information and examples from the EY Top 500 for Japan, Germany, the United States, and Poland; in Layer B, selecting heritage cases with documented multi--generational continuity to illustrate practice configurations.

Gathering of sources: Compiling peer-reviewed research, practitioner reports, and policy/legal materials for each country; retrieving firm-level documents on governance, ownership, and succession.

Coding and extraction: Applying the directed content codebook (strategic-legal-operational-emotional); in Layer A, extracting comparable signals and institutional links; in Layer B, focusing on illustrative episodes and mechanisms only.

Synthesis: Bringing findings together within each country and then comparing across countries; weaving Layer-B vignettes into the narrative to illuminate mechanisms suggested by Layer-A patterns.

*Reliability and Validity*

To enhance credibility, we used source triangulation (scientific literature + independent advisory reports + policy/legal texts). The validity of the content rests on explicit definitions of constructs anchored in established policy/governance references; procedural validity follows the best-practice recommendations for measurement validation in management research.

*Limitations and Ethics*

Findings rely on secondary data and may reflect reporting biases or uneven disclosure between regions. The design does not capture confidential governance practices or family dynamics; operationalisation and measurement are deferred to future empirical work. The study uses only publicly available materials; no personal data were processed, and no human subjects were involved (note: the two-layer strategy entails scope differences: Layer A supports contextualised cross-country comparisons within the top-500 frame, whereas Layer B provides non-representative illustrations of practice configurations. Heritage vignettes are theory-informing but not evidence of prevalence).

## 13.4. Self-organisation of the Family Business Sector

In Poland, there are already numerous in-depth analyses and evaluations concerning the functioning of family businesses, their development strategies, and long-term prospects. These materials have been produced not only by academic centres but also by family business associations. One of the most prom-

inent organisations is the Family Enterprise Initiative (Inicjatywa Firm Rodzinnych, IFR), headquartered in Warsaw and supported by several regional branches. Another key institution is the Institute of Family Business (Instytut Biznesu Rodzinnego), based in Poznań since 2011. The foundation publishes a bi-monthly magazine titled *Relacje. Magazyn Firm Rodzinnych* (*Relations. The Magazine of Family Businesses*), which focuses on issues relevant to the sector. Both organisations regularly organise nationwide and regional conventions, as well as international congresses. They also collaborate with international networks, such as The Family Business Network (FBN), headquartered in Lausanne. In addition, they work with academic institutions like the International Family Enterprise Research Academy (IFERA) and contribute to scholarly publications, including the journal *Family Business Review*. In the international context, a notable role is played by the Cambridge Family Enterprise Group (CFEG), established in 1989 by the Institute for Family Business near Boston, USA. The group supports family firms in dozens of countries by providing research, consulting, and strategic education, particularly to multi-generational businesses with centuries-long traditions. It is also worth noting that in 1981, the Henokiens Association (Association d'Entreprises Familiales et Bicentenaires) was founded in Paris. This network brings together family businesses that have been continuously owned and operated by the same family for at least 200 years.

The Polish Agency for Enterprise Development (Polska Agencja Rozwoju Przedsiębiorczości, PARP), with its headquarters in Warsaw, has been providing significant scientific and organisational support to the family business sector in Poland. In turn, KPMG Poland, an auditing and consulting firm, regularly publishes the *Barometr Firm Rodzinnych* annual report (Family Business Barometer), which analyses the current situation and trends among Polish family enterprises. Other consulting firms – such as Blackpartners, with offices in Gdynia and Warsaw, as well as Deloitte and PwC – also conduct research and publish widely-read reports and popular-science publications on the condition and development of family businesses in Poland. According to estimates by Blackpartners (2015, pp. 6–18), 61% of Polish family businesses are affiliated with associations or organisations that represent the sector, and an additional 15% express an intention to join such structures in the near future.

## 13.5. Longevity and Succession in Family Businesses

Succession in family businesses – understood as generational transfer of ownership and management – is, along with the early stage and growth, one of the most critical and complex challenges for the long-term survival of the enter-

prise. Typically, this transition coincides with the retirement of the founder or owner and often becomes a critical moment for the business due to the risks and opportunities associated with changes in leadership and, potentially, the management system itself. In contrast to non-family businesses – where leadership changes tend to occur gradually and are governed by decisions made by shareholders or supervisory boards – family firms often undergo more concentrated and emotionally charged succession processes.

The concept of succession is relatively well-defined in the literature. Although terminology may vary slightly, the essential meaning remains consistent. Succession often leads to changes in the ownership structure and, at times, in the leadership style, even though control remains within the family. For succession to be effective, the transfer of ownership and power to the next generation should align with the values upheld by the family and the specific characteristics of the sector in which the business operates (Lewandowska, 2015; Fleming, 2000, pp. 129–194; Davis, 2018, pp. 10–19, 80–101).

The founder of a company – or their successor – often interacts with the development of the business with their personal life cycle. However, in general, the individual trajectory of the entrepreneur has only a limited influence on the broader life cycle of the company. This is because a company's life cycle – comprised of four distinct stages – is usually longer and more complex than the personal "term in office" of its leader. Like other economic entities (Shaoolian, 2023; McCoy, 2025), family businesses go through four primary phases of development:

1. Start-up and emergence – the initial stage of establishing the company and achieving operational independence.

2. Growth and youth – marked by dynamic development driven by innovation, energy, and creativity.

3. Maturity – a period of stabilisation and slower growth, often accompanied by formalisation of structures.

4. Decline or renewal – the business either enters a phase of stagnation and potential failure or undergoes strategic transformation to renew its competitive advantage.

The first stage of a family business often begins with a phase of individual entrepreneurship, typically in the form of a sole proprietorship. This may later evolve into a phase of teamwork that involves stable and growing staff. In the third stage of development, family businesses usually enter a phase of professionalisation, characterised by the formalisation of management structures and operational procedures. These four stages of development often span two to three generations of family ownership, although some enterprises last significantly

longer. In the academic literature, longevity is commonly defined as uninterrupted operation for at least 100 years (Kuta, Matejun & Miksa, 2017, p. 94).

The average lifespan of a family business in Europe is approximately 60 years, as confirmed by various studies including those by PwC. However, only about 30% of family businesses successfully transition to the second generation, around 12% to the third, and just 3% survive into the fourth generation and beyond (Zellweger, Nason & Nordqvist, 2012, p. 136–155; Conway Center for Family Business, 2025). In Central and Eastern Europe – including Poland – family businesses show strong financial performance. According to PwC's 2023 Family Business Survey, 83% of family businesses in the region reported increased revenues in the last fiscal year, and 80% expect continued growth over the next two years (PwC CEE, 2023).

More optimistic succession statistics in Central and Eastern Europe can be attributed to increased self-organisation within the family business sector and variations in survey methodologies. However, a significant number of family businesses face challenges during the third generation. Typically, the first generation establishes the company, the second generation expands it, and the third generation may either dissipate accumulated wealth or initiate substantial transformations, such as going public or allowing external shareholders to gain control. These actions often result in the loss of the family-owned and family-managed character of the business. In Poland, family businesses constitute approximately 68% of all enterprises. A recent qualitative study by Klaczak (2023) involving Polish family businesses that successfully completed leadership transitions shows that while founders often express intent to pass on their firms, formalised succession planning remains rare. The study identified four key practices that enabled effective succession: systematic succession planning, grooming of successors, communication with non-family stakeholders, and a focus on long-term sustainability. Despite growing awareness, the lack of structured succession strategies remains a challenge for many Polish family firms (Klaczak, 2023; PwC CEE, 2023).

According to PwC, 64% of family businesses in Central and Eastern Europe are still managed by the first generation, compared to 32% globally. This indicates that many businesses in the region are approaching their first generational transition. Despite the importance of succession planning, only 25% of these businesses have a testament or last will in place, and 69% have some form of governance policy, which is lower than the global average of 81% (PwC, 2023). Challenges to successful succession include intra-family conflicts, lack of interest or preparedness among potential successors, and financial burdens associated with inheritance taxes. These issues underscore the need for early and structured

succession planning to ensure the longevity and continuity of family businesses in the region.

Various associations and research institutes focused on family businesses have developed guidelines, training programmes, and educational materials to support intergenerational succession, with particular emphasis on the first generational transition. Their aim is to streamline the succession process by embedding it within a broader system of management, governance, and long-term strategic planning. One leading organisation in this area is the Cambridge Institute for Family Enterprise, which conducts international research on family enterprise life cycles, with a focus on owner families in more than 30 countries. Their research has covered up to 17 generational transitions (Davis *et al*., 2019, p. 5). In Poland, several studies have examined succession planning as an integral part of family business development strategies. These include analyses and frameworks for designing succession programmes and incorporating them into long-term growth models. Notable contributions in this field come from Surdej and Wach (2012), PARP (2016), Marjański (2016), Zajkowski (2018), and Adamska (2014), whose work has supported the institutionalisation of succession planning in Polish family enterprises.

Recent regional policy initiatives, such as the Succession Management Plan for Małopolska 2030, underscore the growing institutional recognition of succession as a strategic challenge for family-owned firms (Urząd Marszałkowski Województwa Małopolskiego, 2023). The document, developed in cooperation with academic experts and regional stakeholders, highlights that 74% of Polish family business owners intend to pass ownership to the next generation, yet only 26% of firms declare having a formal succession plan in place. Furthermore, the report notes that in 76% of family firms listed on the Warsaw Stock Exchange, successors do not yet hold any ownership shares. This points to a persistent gap between succession intentions and concrete preparation, reflecting low organisational maturity in succession management. The plan calls for integrated support mechanisms – including advisory services, education, and strategic instruments like family constitutions – to improve long-term continuity and competitiveness of the family business sector in Małopolska.

Recently, Poland has significantly advanced its legal framework to support the continuity of family businesses. A notable development is the enactment of the Act on family foundations (Ustawa z dnia 26 stycznia 2023 r. o fundacji rodzinnej), which came into force in 2023. This legislation introduces the concept of a family foundation (fundacja rodzinna) as a legal entity designed to manage and protect family assets, ensuring their preservation across generations. The family foundation serves as a succession planning instrument, allowing

founders to transfer ownership and control of their businesses to the foundation. This mechanism helps prevent fragmentation of family assets and facilitates smoother inheritance transitions. Foundations can be established *inter vivos* or *mortis causa*, with a minimum foundation fund of PLN 100,000. Tax-wise, the establishment and asset transfer to the foundation are exempt from taxation. The foundation's income from permitted activities is also exempt from corporate income tax (CIT). However, distributions to beneficiaries are subject to a 15% CIT, and beneficiaries may be liable for personal income tax (PIT) depending on their relationship to the founder. The introduction of family foundations has been well-received, with over 1,500 applications submitted within the first year, indicating strong interest in this succession tool (Prokocki, 2025).

## 13.6. Cases of Intergenerational Continuity in Family Firms

Japan is home to the world's highest concentration of century-old businesses, with estimates suggesting that approximately 100,000 companies have been in operation for over 100 years. Nearly 100 of them have existed for more than six centuries. One of the most prominent examples is Kongo Gumi, originally founded in 578 AD, which is widely considered the oldest continuously operating family business. The company specialised in the construction of Buddhist temples for more than 1,400 years. Its last family president, Masakazu Kongo, led the firm until 2006, when financial challenges resulted in its acquisition by the Takamatsu Construction Group. Although no longer family-owned, Kongo Gumi continues to operate as a subsidiary, preserving its historic craft tradition. Another notable case is Hōshi Ryokan, a traditional inn founded in 718 AD and located in Komatsu, Ishikawa Prefecture, near Joshinetsu Kogen National Park. It has been managed by the same family for more than 1,300 years, with Zengoro Hōshi, the 46th-generation descendant of the founder, currently serving as its head.

In Europe, some family businesses of mediaeval origins continue to have uninterrupted operations. For example, Château de Goulaine, a vineyard in France's Loire Valley, is believed to have been established around 1000 AD and remains under the stewardship of the founding family. Similarly, the Pontificia Fonderia Marinelli in Agnone, Italy, a bell foundry dating back to around the same time, is still operated by the Marinelli family and officially recognised by the Vatican. In Germany, the Pilgrim Haus Hotel in Soest, founded in 1302, is considered the oldest family-run hospitality business in the country.

In Poland, several family firms with 19th-century origins continue to uphold strong traditions:

- Felczyński Bell Foundry, originally founded in 1808 in Kałusz (now in Ukraine), has been operating in Przemyśl since 1948 under the name Jan Felczyński Bell Foundry and Repair,
- W. Kruk Jewellers, established in 1840 in Poznań, was listed on the Warsaw Stock Exchange in 2002. Despite a later hostile takeover by Vistula Group S.A., the brand continues to reflect the family's artisanal heritage,
- Blikle Pastry Shop, founded in 1869 in Warsaw, long stood as a symbol of Polish confectionery excellence. However, in recent years, it has faced strategic and ownership challenges, in part due to a divergence between traditional values and the priorities of new shareholders.

A distinct segment of Poland's family business landscape consists of artisanal workshops – often representing dying professions but still maintaining traditional craftsmanship:

- Jan Łopieński Brass Company, which has been operating in Warsaw since 1862, is known for fine brass castings and commemorative items,
- Jan Kielman & Son Shoe Shop, established in 1883, continues to produce bespoke footwear entirely by hand,
- Aniela Girdle Shop, founded in 1896, has preserved corsetry traditions, but currently lacks a successor to ensure continuity.

In the United States, the oldest family businesses tend to operate in large-scale industries such as manufacturing and consumer goods. According to The World's Top 750 Family Businesses Ranking (Family Capital, 2025), notable examples include:

- Molson Coors Beverage Company, founded in 1786 by the Molson family in Canada, is now one of North America's leading breweries,
- Hyster-Yale Materials Handling, Inc., whose legacy traces back to 1844 and remains connected to the Taplin, Butter, and Rankin families,
- Dole Food Company, Inc., founded in 1851 and long associated with the Murdock family, continues to be a global leader in the food and agriculture sector.

It is worth highlighting the findings of the Global Family Business Index (2025), based on data collected and published by the Centre for Family Business at the University of St. Gallen in cooperation with Ernst & Young (EY). The ranking includes the 500 largest family businesses in the world and offers a detailed view of ownership structures, governance, and economic scale. To qualify for inclusion, companies must meet two criteria: at least 32% of voting rights held by a family (either directly or via a family trust), and at least one family member actively involved in top management or governance (e.g., on the board of directors).

The index is compiled based on revenue from the past 24 months, making it one of the most up-to-date resources on the global family enterprise sector.

Table 13.1. Top Family Businesses by Annual Revenue – Layer A: EY Family Business Index (2025) Contextual Frame

| Rank | Company | Country | Industry | Revenue (USD billion) |
|---|---|---|---|---|
| 1 | Walmart Inc. | United States | Retail & wholesale | 648.13 |
| 2 | Volkswagen Group | Germany | Automotive & transportation | 356.71 |
| 3 | Schwarz Group | Germany | Retail & wholesale | 179.09 |
| 4 | Cargill, Inc. | United States | Consumer products | 177.00 |
| 5 | Ford Motor Company | United States | Automotive & transportation | 176.19 |
| 6 | Bayerische Motoren Werke Aktiengesellschaft (BMW AG) | Germany | Automotive & transportation | 168.12 |
| 7 | Tata Sons Ltd. | India | Consumer products | 165.00 |
| 8 | Koch Industries, Inc. | United States | Energy & resources | 125.00 |
| 9 | Comcast Corporation | United States | Telecommunications | 121.57 |
| 10 | Reliance Industries Ltd. | India | Energy & resources | 109.90 |
| 11 | SK Inc. | South Korea | Technology | 101.38 |
| 12 | Robert Bosch GmbH | Germany | Automotive & transportation | 90.23 |
| 13 | LVMH Moët Hennessy Louis Vuitton SE | France | Consumer products | 88.92 |
| 14 | MSC Group | Switzerland | Automotive & transportation | 92.60 |
| 15 | ALDI SÜD Group | Germany | Retail & wholesale | 91.76 |
| 16 | Vitol | Netherlands | Energy & resources | 69.88 |
| 17 | Sumitomo Corp. | Japan | Energy & resources | 68.28 |
| 18 | INPEX Corporation | Japan | Energy & resources | 67.79 |
| 19 | Roche Holding Ltd. | Switzerland | Life sciences | 67.23 |
| 20 | Aditya Birla Management Corp. | India | Industry & manufacturing | 66.00 |
| 21 | INA-Holding Schaeffler | Germany | Automotive & transportation | 65.67 |
| 22 | LG Corp. | South Korea | Technology | 64.68 |
| 23 | Country Garden Holdings | China | Construction & real estate | 63.96 |
| 24 | Anheuser-Busch InBev | Belgium | Consumer products | 59.38 |
| 25 | Tyson Foods, Inc. | United States | Consumer products | 52.88 |
| 26 | PHOENIX Pharma SE | Germany | Life sciences | 51.38 |
| 27 | A.P. Moller – Maersk A/S | Denmark | Automotive & transportation | 51.07 |
| 28 | Louis Dreyfus Company B.V. | Netherlands | Consumer products | 50.62 |
| 29 | Enterprise Products Partners L.P. | United States | Energy & resources | 49.72 |

Note: Heritage vignettes discussed elsewhere (Layer B) are illustrative and are not part of this ranking.
Source: own research based on (Ernst & Young and University of St. Gallen, 2025).

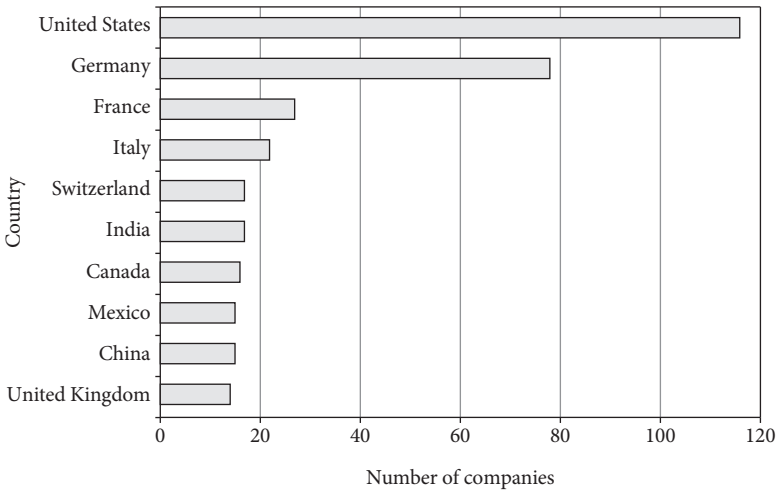


Figure 13.1. Top-10 Countries by Number of Family Businesses (2025) – Layer A: EY Family Business Index Contextual Frame

Source: own research based on (Ernst & Young and University of St. Gallen, 2025).

In 2025, the geographic distribution of the top-500 family businesses covered 44 countries. The United States leads with 116 companies (23.2%), followed by Germany with 78 firms (15.6%). Other significant contributors include France (5.4%), Italy (4.4%), India and Switzerland (3.4% each), Canada (3.2%), China and Mexico (3.0% each), and South Korea and the United Kingdom (2.8% each), see Figure 13.1. The ranking demonstrates a continued dominance of North America and Western Europe, which collectively account for the majority of the world's largest family enterprises. However, a notable trend in this edition of the index is the increasing presence of firms from emerging markets, particularly India, China, Brazil, and Mexico. These companies reflect not only intergenerational endurance but also growth driven by diversification, industrial expansion, and global outreach. India, for instance, has multiple entries among the world's top 30 largest family firms, including Tata Sons, Reliance Industries, and Aditya Birla Group.

From an industry perspective, the largest family businesses operate in a variety of sectors, with retail and wholesale, automotive and transportation, energy and natural resources, and consumer goods being the most prominent (see Figure 13.2). Companies like Walmart, Volkswagen Group, Schwarz Group (Lidl), Cargill, Ford, and BMW top the list, demonstrating how traditional, asset-heavy sectors remain central to the family enterprise model. At the same time, major firms in technology (e.g., SK Group, LG) and life sciences (e.g., Roche, Phoenix Pharma) indicate a gradual shift toward innovation-driven industries.

A particularly interesting aspect of the 2025 list is its global diversity. Although the top-10 countries make up the majority of entries, companies from 44 different nations are represented.

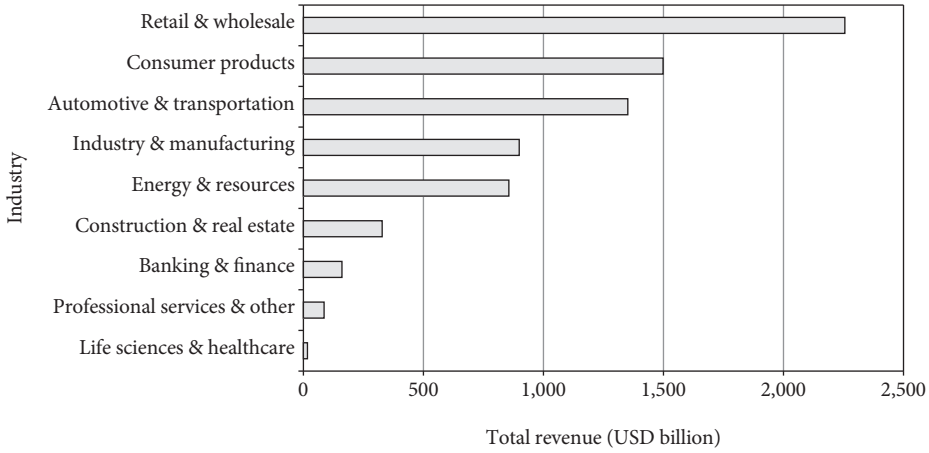


Figure 13.2. Top-10 Industries by Total Revenue of Family Businesses (2025) – Layer A: EY Family Business Index Contextual Frame

Source: own research based on (Ernst & Young and University of St. Gallen, 2025).

This reflects not only the universality of the family business model but also the growing importance of family ownership structures across a wide spectrum of economic systems and legal cultures. The 30 largest companies by revenue include such names as Walmart Inc. (USA), Volkswagen Group (Germany), Tata Sons (India), Koch Industries (USA), Reliance Industries (India), SK Inc. (South Korea), and LVMH (France). These businesses illustrate how family control and economic scale can successfully coexist, often across several generations and continents.

## 13.7. Findings and Discussion

The comparative desk research, directed content analysis and case vignettes from Japan, Germany, the United States and Poland indicate that formal succession planning, while necessary, is insufficient to secure continuity. Evidence across cases aligns with the working hypothesis that higher succession maturity – articulated as strategic, legal, operational and emotional readiness – coincides with greater longevity and resilience. With respect to RQ1, observable practices span all four domains: strategy-level embedding of succession, use of legal continuity vehicles, professionalised governance and leadership pipelines, and socio-emotional cohesion. Regarding RQ2, country-level institutions and interme-

diary organisations shape the prevalence and quality of these practices: where legal frameworks and association networks are strong (e.g., Japan, Germany), succession maturity appears more deeply institutionalised. For RQ3, the cross-country pattern is consistent: self-organisation into associations, foundations and international networks supports knowledge exchange, diffusion of good practice and collective advocacy, whereas isolated firms – especially in post-socialist contexts – report fewer formalised arrangements.

The analysis positions succession maturity as an integral dimension of organisational maturity in family firms. The construct synthesises legal-technical arrangements with organisational capabilities and socio-emotional factors, providing a heuristic lens that links transgenerational entrepreneurship to the institutionalisation of ownership, governance, and leadership continuity mechanisms. In this sense, the chapter contributes a conceptual bridge between maturity thinking and family-business continuity without proposing a fixed taxonomy.

For firms, the findings underscore the need to move from reactive, event-driven succession to deliberate, system-level design: aligning strategy with next-generation development, formalising governance, and cultivating family cohesion and communication. For the intermediary field, association-led programmes can accelerate the diffusion of practice standards and peer learning. For policymakers, legal reforms that enable structured inheritance solutions (e.g., family foundations), together with investment in managerial education and stronger sectoral coordination, are complementary levers for raising succession maturity.

The study is based on secondary sources and concise vignettes; access to confidential governance arrangements was outside scope. Differences in disclosure practices across countries may affect comparability. The concept of succession maturity is intentionally heuristic at this stage and not yet operationalised as a validated measurement instrument.

Subsequent work should specify and test measurable indicators aligned with the four core domains, examine pathways by which associations and institutional frameworks influence adoption, and assess the transferability of practices across contexts. Advancing content validation and reliability procedures for a practical diagnostic tool remains a priority.

## 13.8. Conclusions

Longevity in family enterprises depends not on the existence of a succession document *per se*, but on the institutionalisation of succession within the firm's wider governance architecture and strategy process. The two-layer design clarifies why population-level patterns (Layer A) and heritage illustrations

(Layer B) converge on the same mechanism: Succession must be institutionalised within governance and strategy to be durable. As documented in section 4, self-organisation into national and international associations functions as a meso-level coordination mechanism: brokering knowledge, diffusing governance standards, and lowering the cost of adopting succession routines. Read alongside the country vignettes in section 6, this explains the observed gradient: Where association density and enabling legal forms are present, firms more readily institutionalise succession within the strategic-legal-operational-emotional portfolio; where such scaffolding is thin, practices remain fragmented and event-driven. Read through the lens of succession maturity, the cross-country evidence points to a portfolio logic: Strategic intent (succession linked to growth and renewal), legal instruments (continuity vehicles that stabilise control), operational routines (professionalised structures and role clarity), and emotional cohesion (trust, communication, shared purpose) must cohere. Where legal frameworks and self-organised association networks make such coherence easier to achieve, the observed continuity prospects are stronger – not because any single practice is decisive, but because complementary arrangements can be assembled and maintained over time.

This frame of reference clarifies why plan-centric approaches underperform: They target an event, whereas continuity is produced by recurring routines – board and family-governance rhythms, leadership pipelines, and communication practices – that survive changes in individuals. Evidence from section 6 reinforces this mechanism across contexts (Japan, Germany, the United States, Poland): Institutional complements differ, but the firms that embed succession into board rhythms, leadership pipelines, and communication practices converge on similar outcomes. Section 4 adds the meso-institutional link by showing how associations and networks translate abstract guidance into repeatable routines at the firm level.

For practitioners, the practical agenda is therefore to shift from one-off planning to the design of durable mechanisms that embed succession into strategic and governance cycles. Sections 4–6 provide the empirical touchpoints that make the case for succession maturity as the actionable synthesis of continuity mechanisms rather than a plan-centric checklist. For policymakers and intermediary organisations, the agenda is to reduce the cost of assembling those mechanisms – through enabling legal forms, capacity building, and platforms for peer diffusion – so that firms can align their four domains of maturity.

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Chapter 14

# The Knowledge-based Economy: An Innovative but Unstable Phase in the Evolution of Market Economies*

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## 14.1. Introduction

The chapter is part of a cycle of publications dedicated to knowledge-based economy (KBE), which presents the results of the theoretical and empirical analyses undertaken during the past decade. The main aim of the chapter is to concisely sum up the main arguments, allowing us to clarify the controversial nature of KBE concept, reconciliating neoclassical and mainstream traditional KBE definition with the critical Keynesian, Post-Keynesian and heterodox stance to the matter. As the chapter title suggests, the fundamental research question addressed in the text is justifying the definition of the current KBE phase of market economies evolution as an innovative, but unstable one. The chapter, then, underlines that neoclassical KBE traditional interpretation as an extraordinary positive phase of underheard fast growth and incredible development, whose explanation requires the elaboration of completely new theoretical models, does not find a confirmation in macroeconomic trends evolution in main market economies during the whole 20th and 21st century.

However, the very same data allow considering KBE as a phase of market economies evolution:

- characterised by both high instability and higher innovation in comparison to the former industrial era and recalling in many respects the late 19th and early 20th century second industrial revolution end phase of development,
- perfectly explainable based on models already available, although looking outside mainstream economic theory and taking into account management methods evolution would be required.

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Current chapter extends, moreover, data analysis both geographically and temporarily in comparison to former ones, clarifying meanwhile some methodological issues which could result in confusion for readers unfamiliar with the history of economic thought. Postponing those secondary considerations, let us, however, start from presenting the traditional KBE definition, stressing its neoclassical roots and the fact that it is far from being a totally neutral academic concept.

## 14.2. The Optimistic KBE Concept of Neoclassical Origin

In management KBE is often defined as post-industrial phase of market economies evolution, during which knowledge, services, intangible assets, innovation, knowledge-workers have assumed a key-role in determining the performance of both firms and whole countries (Rojek, 2023; Zubek, 2023). Although some management specialists also underline instability and an increased role in global competition (Mikuła, 2024), mainstream economists instead define KBE as "achieving higher levels of productivity by using knowledge (…) the single most important source of the economy today" (Abbasinejad & Zahedi Khoozani, 2021, pp. 567–570). They stress, moreover, that (Abbasinejad & Zahedi Khoozani, 2021, pp. 570–572):

> The traditional factors of production – land, labor, and capital – (…) are of secondary importance. (…) neoclassical growth (…) theories, consider the role of knowledge, education and technology, technical advancements, and general knowledge-based economy to be essential in economic growth and development. Even in some cases, the importance of knowledge goes beyond the other inputs of production and economic growth in growth models. (…) higher innovation indicates higher production and sales levels (…) assuming the stability of other conditions, an economy with higher innovation will also have higher per capita income. Therefore, countries with higher per capita incomes are likely to have higher levels of innovation.

However, similar statements (Harris, 2001) led some economists to criticise the KBE concept, underlining its rhetorical nature and the fact that its diffusion and propagation during the 1990s and early 2000s were ignited by OECD to affect the economic policy agenda (Godin, 2006). This supports the emergence of an alternative point of view concerning the development phase of current market economies, discussed more in depth elsewhere (Valente, 2020b, 2025a, 2025b). The traditional definition of KBE can, indeed, be considered strongly dependent on the "political" climate of the second half of the 1990s and early 2000's and the worldwide dominance of neoclassical theory and policies, emerging as an inextricable conundrum by the end of the Cold War through:

- the so-called "conservative revolution" of Piketty (2014), which led to the parallel affirmation of monetarism in economic theory and liberalism in politics, such as the Regan and Thatcher policies, the elaboration and implementation of the Maastricht Treaty rules in EU countries, and the privatisations and liberalisations of both formerly centrally planned economies and market ones formerly more reliant on public interventions,
- the early free-trade policies and liberalisation of capital movement worldwide, which supported the globalisation process and financialisation, taking shape during the 1990s and 2000s,
- the neoclassical endogenous growth theory elaboration during the 1980s, which supported at once both the two formerly pointed out aspects as well as the increased focus on knowledge, human capital, and innovation, constituting the very core of the traditional KBE idea.

In a document often hailed as the main source of KBE concept diffusion, as a matter-of-fact OECD itself stresses the strong link between KBE and neoclassical theory, pointing out that (OECD, 1995, pp. 3–5):

> Economics has so far been unable to provide much understanding of (…) long-term growth. At the heart of the old theory (neo-classical) is the production function, which (…) focuses on the traditional factors of labour, capital, materials and energy. It visualises that returns diminish as more capital is added to the economy, an effect which may be offset, however, by the flow of new technology. It sees technological progress, not investment, as the engine of growth. But it provides no convincing understanding of (…) technological progress (…).
>
> The new growth theory (…) sees the source of sustained growth to be the accumulation of knowledge (…) that (…) can raise the return on investment (…). It admits the possibility of a virtuous circle, in which investment spurs knowledge and knowledge spurs investment (…) a sustained increase in investment can permanently raise a country's growth rate, a result rejected by the old theory. (…) The strength of the new growth theory is (…) its clearer grasp of the role of technological progress (…). Emphasis (…) on technological change rather than pure capital accumulation as (…) driving (…) growth, draws attention to the role of ideas (…) unlikely to be subject to the law of diminishing returns (…). The central message is, therefore, fundamentally positive, as (…) there are no boundaries to real-income-creating, sustainable growth (…) the new growth theory's focus on technological progress differs substantially from the pessimistic prediction of the prevailing neo-classical growth model, where technological progress is seen only as a constantly rising efficiency of available inputs. (…) Economics now has something significant to say about long-term economic growth.

Let us then have a closer look to the features of neoclassical growth theory and to the predictions it supports.

## 14.3. Neoclassical Exogenous and Endogenous Growth Models

The old neoclassical exogenous growth theory was uncontroversially shaped by Solow (1956) growth model. It is an exclusive supply-side approach, based on the idea that in the long-run economic systems operate at full-employment and full, or extremely high "normal" capacity utilisation rates. It assumes, in other words, that demand shortages and economic crisis will not affect the long-run growth path (Solow, 1988; Valente, 2025a, 2025b). It relies, moreover, on aggregate production function and the principle of diminishing returns from labour and capital conceived in monetary terms. This principle, in turn, derives from a simplification and misinterpretation of David Ricardo's diminishing returns from agricultural land (Pasinetti, 2000). The diminishing returns principle in its hallmark mainstream economics version is a result of the re-elaboration of Ricardo's idea by neoclassical economists of the 19th century and early 20th century, later propagated worldwide by neoclassical synthesis authors during the 1950s and 1960s (Pasinetti, 2000).

Although it has limitations (OECD, 1995; Pasinetti, 2000), this model still lies at the very core of neoclassical endogenous growth theory, which some treat just as an extension of it (Solow, 1988, 2000). The new endogenous growth theory does not criticise any of the basic assumptions of Solow's exogenous model. It just introduces knowledge, human capital, and technical progress as endogenous variables dependent on and/or affecting labour and capital productivity and production levels. Although generically referring to knowledge, human capital, endogenously generated technical progress or even innovation can be considered somehow vague, this should not surprise the reader, since one of the most influential founding fathers of neoclassical endogenous growth theory points out that (Lucas, 2004, p. 6):

> The modern theory of sustained income growth, stemming from the work of Robert Solow in the 1950s, (…) deals with the problem (…) assuming a fixed rate of population growth. In such a context, the accumulation of physical capital is not, in itself, sufficient to account for sustained income growth. With a fixed rate of labor force growth, the law of diminishing returns puts a limit on the income increase that capital accumulation can generate. To account for sustained growth, the modern theory needs to postulate continuous improvements in technology or in knowledge or in human capital (I think these are all just different terms for the same thing) as an "engine of growth."

Thus, a strong linkage among endogenous growth theory, Solow model and the 19th-century neoclassical diminishing returns principle exists. Mentioning just factor productivity increases and their effects on potential output, moreover,

implicitly confirms that these models focus exclusively on supply evolution. In mainstream endogenous growth models, furthermore, human capital or knowledge accumulation is conceived as dependent on the amount of physical capital already accumulated or its rate of accumulation (Valente, 2016b), based on mechanisms connected exclusively with aggregate supply, such as:

- a positive propension to save influence on human capital accumulation. According to 19th-century neoclassical assumptions, higher savings are indeed expected to increase physical capital accumulation. This in turn sustains GDP growth and leads to higher incomes, increasing as a result human capital accumulation, too (Mankiw, Romer & Weil, 1990);
- a complementarity between the recourse to human and physical capital in the production process (Galor & Moav, 2004). The higher the amount of physical capital used in production by firms, the higher will be the demand for skilled labour and human capital that firms will be willing to employ. A larger number of machines and equipment or the availability of more advanced one is thus expected to increase the willingness to hire skilled employees;
- a supply-side substitution process between human and physical capital and a progressive transition from one kind of "capital" to another, underlining that:

  – based on the neoclassical diminishing returns principle, the higher the amount of physical capital accumulated, the lower will be its remuneration – e.g., rate of profit or return from capital – due to its relative abundance in comparison to labour,

  – since improving their skills, qualifications or abilities can be treated by the individuals shaping human capital supply as an investment in an asset alternative to physical capital,

  the attractiveness of "investments" in human capital increases when the amount of physical capital available in a society increases, leading once again to a direct positive dependence of human capital accumulation on the level of physical capital accumulated or its very accumulation rate, for reasons affecting human capital supply as shaped by households (Galor & Moav, 2004).

Technical change, instead, is usually considered as positively dependent either on income and GDP, on human capital or physical capital accumulation alone, or on all of those factors at once (Aghion & Howitt, 1992; Galor & Moav, 2004). Whatever factor affecting physical capital accumulation affects then human capital accumulation and technical change too, becoming an indirect source of endogenous growth (Setterfield, 2014; Valente, 2016b). This is at once:

- one of the main reasons supporting the definition of those models as neoclassical,
- the main issue endogenous growth theory is facing when dealing with data concerning main market economies evolution during the whole 20th and 21st century.

Based on Solow, all neoclassical endogenous growth theorists, indeed, inherited from him:

- Say's law acceptation,
- an exclusive supply-side approach,
- the diminishing return principle in its 19th-century neoclassical version,
- the typically neoclassical identification of financial wealth increases measured in monetary terms on the supply side with demand side productive factors' accumulation and increased availability in physical terms (Pasinetti, 2000).

As a result, thus, modern endogenous growth theory is still based on the controversial 19th-century neoclassical idea of a positive dependence of capital – both human and physical at this point – accumulation on propensity to save and income inequalities increases (Valente, 2025a, 2025b). Since the more affluent a given individual is, the higher will be its propensity to save, both in the Solow model (Sala-i-Martin, 1990a, 1990b) and its endogenous extensions (Setterfield, 2014; Valente, 2016a, 2016b, 2025a, 2025b), income inequalities increases are, indeed, expected to exert a positive effect on savings, capital, and/or wealth supply. This will in turn increase physical capital accumulation and GDP growth rate, either temporary – in the Solow model – or permanently if the human capital accumulation and/or technical change dependence upon physical capital accumulation and/or GDP growth is considered as in endogenous growth theory. However, such effects are strongly dependent on the oldest part of neoclassical thought and do not consider the negative effects that higher income inequality can exert on aggregate demand and firm's sales opportunities, when Say's law does not hold (Keynes, 1936). Due to this peculiar 19th-century neoclassical interpretation of relative scarcity and diminishing returns principles, moreover, income distribution is expected to stabilise itself. Neoclassical authors, thus, consider useless to inquire income distribution evolution and normally abstain from that (Solow, 1988, 2000) or directly criticise any such attempt, pointing out that (Lucas, 2004, p. 8):

> Of the tendencies (…) harmful to sound economics, the most seductive, and (…) the most poisonous, is to focus on questions of distribution. (…) of the vast increase in the well-being (…) that has occurred in the (…) course of the industrial revolution to date, virtually none of it can be attributed to the direct redistribution of resources from rich to poor. The potential for improving the lives of poor people by finding different

ways of distributing current production is nothing compared to the (…) limitless potential of increasing production.

Since such is the nature of the models, on which traditional KBE concept depends, let us, first of all, discuss shortly how those models perform in comparison to data, then consider how, looking at the concept from a perspective alternative to the neoclassical one, an alternative KBE interpretation emerges from such a comparison.

## 14.4. Evolution of Developed Countries in the 20th and 21st Century: Data, Research Methodology, and Limitations

It is worth noticing, first of all, that, while the data presented here extend and refine the former analysis, they confirm the main results of the former studies. As already stressed elsewhere (Valente, 2016a, 2016b, 2020b, 2021, 2025a, 2025b, 2025c), indeed, data concerning the evolution of the main market economies during the 20th and 21st centuries do not fit the assumptions of the neoclassical theory very well. All the opposite of what could be expected based on traditional KBE definition, indeed, both wealth supply accumulation and GDP growth – calculated as the variable level percentual increase or decrease ratio in comparison to the previous year – have decreased since 1980 in comparison to the former industrial era in all G7 countries. Sticking exclusively to the neoclassical approach, then, we should:

- either negate completely the fact that knowledge exerts a positive effect on growth, all the opposite of what endogenous growth theory logically assumes,
- or negate that KBE is characterised by higher knowledge levels or relevance in comparison to the industrial era, which will be at odd, with KBE traditional definition and practically whatever has been written on the issue during the last three or four decades by management specialists.

Considering other approaches, instead, allows avoiding such paradoxical results, underlining that the main issues with both KBE traditional definition and endogenous growth theory are the fact that the older underlaying assumptions derived from the 19th and early 20th century neoclassical theory do not align with the data.

This idea can be confirmed, moreover, considering that, indeed, data do not support the neoclassical idea that higher income inequality has beneficial effects on wealth and GDP. In fact, higher accumulation and growth rates emerged when income inequality was lower than during the industrial era, rather than when they increased as it is now since 1980 (Piketty, 2014), see Figures 14.1–14.2.

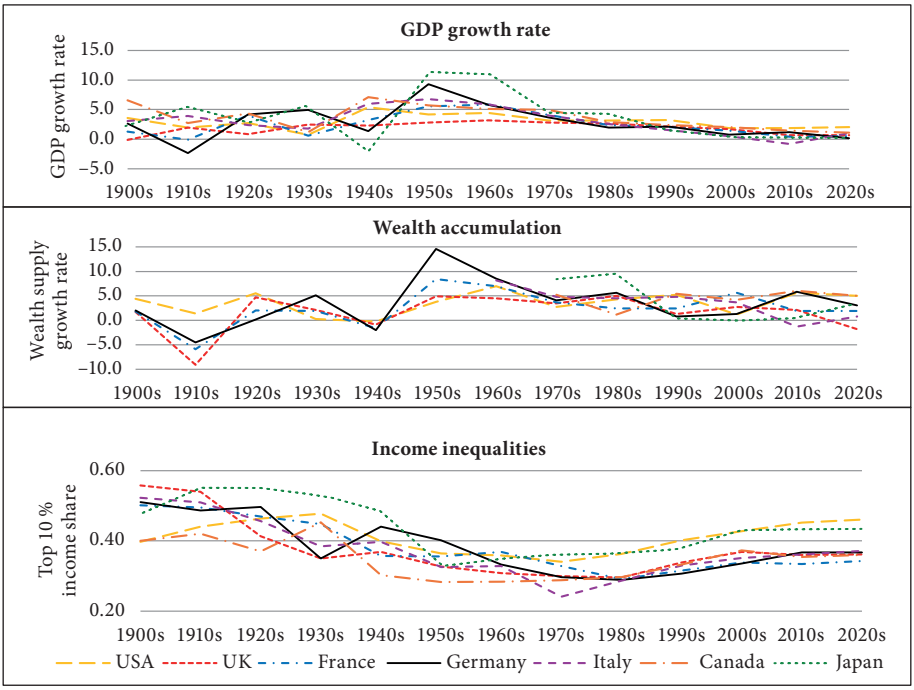


Figure 14.1. Main Market Economies Evolution per Decade during 20th and 21st Century
Source: own elaboration based on World Income Inequalities data.

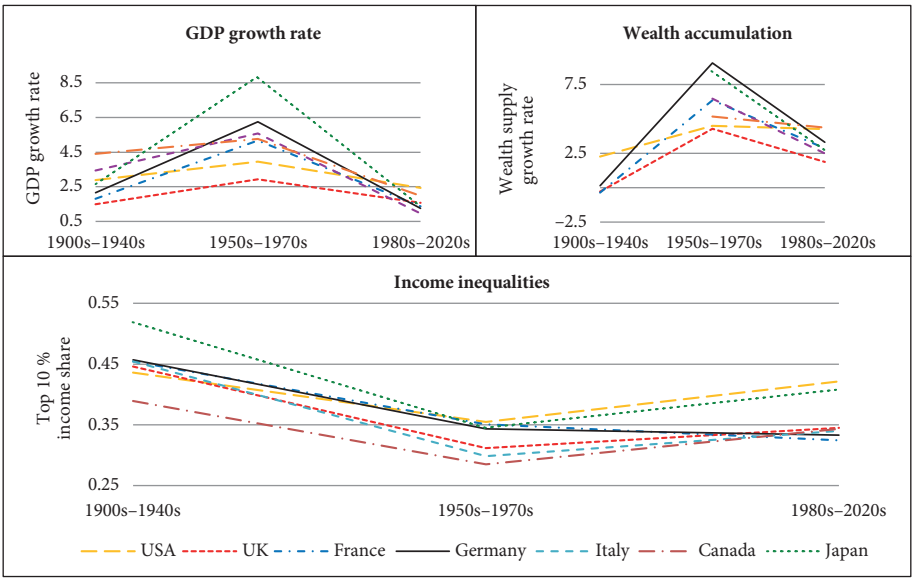


Figure 14.2. Main Market Economies Evolution during Different Development Phases
Source: own elaboration based on World Income Inequalities data.

As already argued elsewhere (Valente, 2016a, 2016b, 2020a, 2020b, 2021, 2025a, 2025b, 2025c), this:

- supports a completely different interpretation of current KBE,
- leads to the need to integrate heterodox and mainstream arguments based on the historical evolution of management methods.

However, let us first discuss some methodological issues and the potential limits arising from such an integration of management and distinct economic theory schools of thought. The significant divide among neoclassical or mainstream school and Keynesian, Post-Keynesian, and heterodox ones, indeed, has not just a theoretical nature, but also has significant methodological implications. While neoclassical theory adopts a purely hypothetical-deductive, theory first, data second approach, recurring according to some to mathematical formulations, controversial and tautological definitions of key-variables artificially supporting neoclassical assumptions correctness (Pasinetti, 2000), a more empirical historical-deductive one prevails in heterodox approaches (Bresser-Pereira, 2009). Some, thus, point out that (Bresser-Pereira, 2009, p. 493):

> The hard core of relevant economics is formed by (…) the classical theory of capitalist economic growth and by Keynesian macroeconomics. In contrast, neoclassical economists aiming to build a mathematical science wrongly adopted the hypothetical--deductive method and came to (…) growth models that do not have practical use in policymaking.

Since the aim of the present study is to analyse the KBE concept in practical and empirically relevant terms, instead of trying to fit the data into any kind of mathematical model based on neoclassical hypothesis, a historical--deductive approach was thus adopted in the reference of the chapter. It is worth stressing, moreover, that although neoclassical theory and hypothetical-deductive approach dominates in mainstream thought, even neoclassical theorists are aware of the fact that (Lucas, 2004, p. 5):

> It is accurate to say that we have not one but two theories of production. (…) One (…) is (…) classical theory (…) not inconsistent with the enormous improvements in knowledge (…) that supported huge population increases and vast wealth for owners of land and other resources. Increases in knowledge over the centuries also stimulated a large-scale accumulation of productive capital. (…) Capital accumulation, too, played a role in supporting ever larger populations. (…) The modern theory of (…) growth, stemming from the work of (…) Solow (…) needs to postulate continuous improvements in technology or in knowledge or in human capital. (…) The modern theory (…) and the classical theory (…) are obviously not mutually consistent. Nor can we simply say that the modern theory fits the modern world and the classical theory the ancient world (…). Understanding the progress of the industrial revolution as it continues today necessarily entails understanding why.

Adopting a historical-deductive approach more in line with heterodox thought can allow a better understanding of the likely causes and mechanisms that led historically to KBE emergence, leading to a less ideologically-orientated and more pragmatical interpretation of present market economic systems functioning, possibly more useful for management specialists (Bresser-Pereira, 2009; Lavoie, 2022; Stockhammer, 2022). However, one of the main limitations of the authors' analysis is that such approach does not allow the formulation of mathematical models, typically used to draw ex-ante forecasts, estimates, and political advices by mainstream authors. Such feature of neoclassical approach is, however, exactly the most harshly criticised by methodologists (Bresser-Pereira, 2009) while the historical-deductive method allows us to infer the probable outcomes of a given decision, when facing certain conditions or operating in a given context. Thus, such conclusions can be deemed relevant – and maybe even more useful than mainstream predictions – for the formulation of public policy and firms' development strategy, based on a more pragmatic process of ex-post analysis of past phenomena and their comparison with current or future challenges.

Let us, then, discuss what presented data interpretation and alternative approaches have to offer in practice to improve our understanding of KBE phase of development, in which we are living.

## 14.5. An Alternative Pessimistic Interpretation of Knowledge-based Economy

The emergence of earlier unavailable historical data similar to those presented in the former section due to the commendable work of Piketty (2014) led, first of all, some to reconsider the idea that neoclassical theory is the best one to explain the developed countries growth dynamics after industrial revolution and to stress that (Kunkel, 2014):

> Stark inequality may be a stipulation of rapid growth during early industrialisation. Later on, a flatter distribution seems to clear the way to faster growth (…). The pattern prevails generally across the 20th century. Mass consumption fed the Roaring Twenties; full employment of labour (…) fortified FDR's war economy; and the fragile postwar settlement between workers and owners (…) encouraged labour-saving productivity advances by raising wages which themselves swelled mass consumption. (…) If high growth accompanied lower inequality in the mid-20th century, what accounts for the complementary pattern across the past forty years? Since the 1970s growth has slowed and inequality accelerated. Explanations advanced by others range from chronic overcapacity in international manufacturing, to the explosion of a financial sector better at inflating short-lived bubbles than committing to long-term investment, to the depressive effect of stagnating working-class incomes.

Considering those long-run trends, moreover, allows connecting KBE emergence with that of other notable phenomena as globalisation, servitisation and financialisation, since (Thurow, 2000, pp. 24–25):

> The economic gaps that have over the course of the last half-century shrunk are now widening.
>
> In the first and second industrial revolutions, workers were leaving agriculture (a low-wage inegalitarian sector (…) and entering manufacturing (…) (intrinsically higher waged and more egalitarian due to higher skill requirements). States supported labor unions led to even more egalitarian distribution of wages. The social welfare state then used (…) to further increase (…) income equality.
>
> But the knowledge-based economy essentially reverses all of these sources of equality. In the third industrial revolution, workers are leaving manufacturing (…) to enter services – a sector with a very wide dispersion of wages and average wages below (…) manufacturing (…). Because of this (…) wage dispersions have increased sharply. (…) Despite the booming prosperity of the 1990s in the United States, the trend toward sharply rising inequality has continued. (…) The egalitarian policies of the social welfare state are also in retreat. (…) The Organization for Economic Cooperation and Development repeatedly chastise Europe for not "deregulating its labor markets" and letting wages fall. (…) In GDP statistics, the economic returns to capital are up and the returns to labor are down (…). This is not surprising, given that labor is more abundant relative to capital on a global basis than it is in the rich developed world. Similarly, among workers, the returns to skills are up and the wages of those without skills are down. This is not surprising, given that on a global basis the supply of unskilled workers far exceeds that of skilled workers and that new technologies are increasing the need for skilled workers.
>
> Financial crises magnify these rising inequalities. (…) the austerity demanded by the International Monetary Fund to restore global macro-stability leaves countries with much greater levels of internal inequality.

Although reported considerations concerning relative scarcity of productive factors, based still on 19th-century neoclassical assumptions, the emergence of such alternative pessimistic KBE interpretation, similar to that adopted by some management authors (Mikuła, 2024), led others to consider useful considering theories, which, differently than neoclassical ones, stress the positive effects of income inequality reduction on capital accumulation and economic growth, underling, that (Kunkel, 2014):

> In the decades after the Second World War (…) the rich countries enjoyed unprecedented growth as well as the unprecedented moderation of inequality. To award all credit for higher growth to lower inequality would be foolish (…) but (…) Keynes took pains to argue that a top-heavy income distribution can hamper the investment in production on which growth depends. Too much money in the hands of the rich, who save more of their income than others, may curtail demand for both consumer goods and the capital

goods (…) (consumption being, as Keynes put it, 'the sole end and object of all economic activity'). (…) Piketty makes little connection between the 20th century's atypically low inequality and atypically high growth (…): a remarkable defect. (…) No theory of capitalist dynamics can do without (…) the interaction of distribution and production.

Similarly to what can be argued in the case of Piketty (2014), then (Pasinetti, 2000, pp. 424–426):

The severest criticism that can be moved to neoclassical (…) theory is that of having pushed aside the theory of income distribution into a secondary (…) role. (…) Technical progress, receiving (…) renewed attention, is a (…) crucial aspect of today's industrial societies. Neoclassical (…) theory (…) brought technical progress back (…) but (…) at the cost of pushing problems of (…) distribution to the margin. (…) Among the economic characteristics that have most profoundly marked the last decades of the 20th century, income and wealth inequalities (…) emerge as one of the most important (…) phenomena. (…) Never in the history of mankind has the world shown such sharp inequalities in income and wealth (…) The final impression is that the most appropriate schemes for economic theory are (…) those that widen (…) research into (…) income (and wealth) distribution, not those that are pushing them to the margin. (…) A whole alternative stream of research – (…) deriving from classical theory (…) Kalecki, Kaldor, Keynes, Sraffa (…) – has been left aside. (…) Given the present unsatisfactory situation (…), one should at least consider having second thoughts on what (…) might open up far more interesting and promising opportunities.

Let us, then, discuss how it will be possible to integrate the undeniable increased human capital, technical progress, knowledge, and innovation relevance with the other – rather negative – phenomena discussed here, based on alternative approaches.

## 14.6. Post-Keynesian Theory and Management Methods Evolution: A Proposal of Reconciliation of Different Economic Theories

While neoclassical theory is one of the most popular schools of thoughts in economics and has dominated it since the last quarter of the 19th century, it is not the only one existing (Pasinetti, 2000). A very relevant exception to such dominance is indeed represented by the popularity of Keynesian theory, which eclipsed the neoclassical one during the late 30s and – in its full-employment economic policies incarnation – became after WW2 the cornerstone of economic policy and theory in market economies worldwide. Although the controversial mix of Keynesian short-run theory and policies and neoclassical economic growth theory and microeconomics, promoted by neoclassical synthesis, characterised the 1950s and 1960s, the Keynesian approach was in the end marginalised just in the 1970s under the conjunct pressure of:

- monetarism, oil shocks and stagflation emergence,
- the process of microfoundation of macroeconomics undertaken by neoclassical authors of the period and propaedeutic to endogenous growth theory elaboration (Pasinetti, 2000; Lavoie, 2022).

However, the Keynesian approach is still the second most popular in economics. It therefore seems pretty natural to look at Keynesianism for alternative interpretations of KBE, when, as pointed out, phenomena observed contradict neoclassical assumptions. In addition, the low inequality and high growth phase of the industrial era overlaps exactly with the period during which Keynesianism was at the peak of its popularity, while the phenomena that contribute to Keynesian dismissal are in many respects the same as the ones that caused the end of the industrial era in the 1970s (Piketty, 2014; Kunkel, 2014; Valente, 2016a, 2016b, 2020a, 2020b, 2021, 2025a, 2025b, 2025c). Although submerged by the reaffirmation of the neoclassical mainstream economics in the 1970s and 1980s, the Keynesian approach is still alive in its Post-Keynesian reincarnations, intermingling Keynesian and classical theory (Pasinetti, 2000; Lavoie, 2022). While recovering authors such as Smith, Ricardo, Keynes, Kalecki, Kaldor, Robinson, and Sraffa can be attractive in itself, the Post-Keynesian historical-deductive methodology allows integrating ideas and principles derived from different sources, including management and – at least partially – neoclassical ones, too. Finally, if the main additional feature of the current KBE phase of development is the instability and stagnation of growth, that paralleled income inequalities increase (Kunkel, 2014; Valente, 2016a, 2020a, 2020b, 2021, 2025a, 2025b, 2025c), Post-Keynesians can have much more to say about the matter than neoclassicals. Keynesians, indeed, argued long ago that income inequalities increases can negatively impact demand and that, in turn, while always being identical statistically, it is demand that determines the actual level of supply, that firms will deem reasonable to keep producing in the future. Even a neoclassical author such as Solow complains instead about the fact that neoclassical growth theory has not addressed the effect of short-term demand fluctuation or stagnation on supply growth (Solow, 1988, 2000; Pasinetti, 2000), while Post-Keynesians focus only on that (Lavoie, 2022).

In various shapes and considering different mechanisms, indeed, they never considered economic growth exogenous, independently of human capital, knowledge, or innovation connected considerations (Setterfield, 2014; Valente, 2016a, 2016b). They argue for path-dependency of supply on sales and demand levels evolution registered in former periods, through variously conceived acceleration mechanisms, that justify a positive dependence of capital accumulation upon demand increases. Since demand in turn depends on consumptions, for

the same argument concerning propensity to save and to consume difference among rich and poor individuals, considered by neoclassicals, they argue, then, for a positive dependence of capital accumulation and economic growth exactly on income inequality reductions. Although a detailed discussion of such mechanisms is behind the present chapter scope and is available elsewhere (Garegnani, 1983, 1992; Bhaduri & Marglin, 1990; Lavoie, 2022; Valente, 2025a, 2025b), considering Post-Keynesian sources of endogenous growth does not mean that neoclassical endogenous ones did not play a role (Setterfield, 2014; Valente 2016b, 2025a, 2025b, 2025c). It means, instead, that historical market economies evolution is much more complex than simplified economic models of whatever origin allow to be considered without integrating them with arguments derived from theories and other disciplines (Valente, 2021, 2025a, 2025b, 2025c). Although elaborating such an integration and solving controversies that in some cases are more than a century old, is not an easy task (Valente, 2025a, 2025b), this attempt, nevertheless, seems to already support an introductory alternative explanation of the reasons behind the emergence of KBE and its main features.

Integrating Post-Keynesian and neoclassical sources of endogenous growth leads first of all to conclude that:

- as per classical reasoning, oil shocks, and conservative revolution:
  – caused an increase in income inequalities at the end of the 1970s,
  – ended industrial era stipulation of low inequality and high growth regime based on Keynesian policies;
- as per Keynesian and Post-Keynesian argumentation, this:
  – reduced and destabilised demand for firms' products and in particular for those produced on mass basing on Fordistic methods,
  – leads to a worsening of growth dynamic, that reinforced and accentuated the process of increase of income inequalities;
- according to neoclassical endogenous growth theory and historical management evolution analysis, the same process:
  – increased the role of flexible production methods based on human capital and innovation at the firm level, as well as, at the whole country, partially sustaining growth, whose fall could have been otherwise even worse (Valente, 2020a, 2025a, 2025b, 2025c),
  – caused the parallel process of reorienting the servitisation, financialisation, and portfolio choices, allowing wealth owners to keep their patrimony safe and increasing the contribution of intangible assets to the determination of firm market value (Ocean Tomo, 2020; Valente, 2021, 2025a, 2025b), see Figures 14.3–14.4.

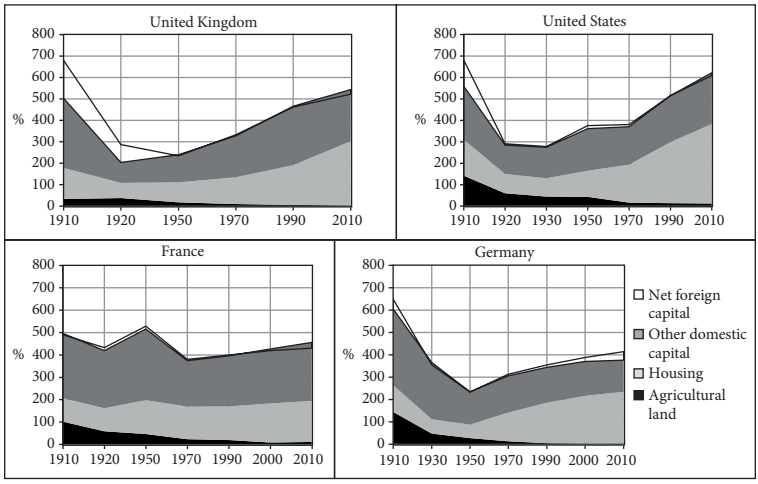


Figure 14.3. Wealth to Income Ratio Decomposed
Source: (Piketty, 2014).

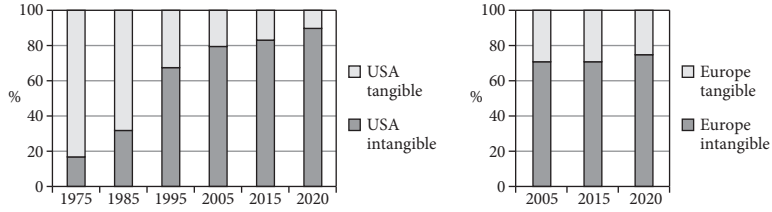


Figure 14.4. Tangible and Intangible Assets Contribution to Best Performing US and European Firms Market Value
Source: own elaboration based on (Ocean Tomo, 2020).

Overall, then it seems possible to define the KBE phase of the development of market economies as a more unstable one in comparison to the former industrial era. However, the same phenomenon causing the worsening of growth and physical capital accumulation dynamics increased the profitability and relevance of innovation, knowledge, human capital, and intangible assets, too. Thus, they partially mitigated the negative effects of the increase in income inequalities registered in all G7 countries since the end of 1970s.

## 14.7. Final Observations and Conclusions

While in short the current chapter supports, according to the author, the initially proposed interpretation of the present KBE phase of development as an

innovative, but unstable one, it allows formulating practical conclusions that can be deemed relevant by management specialists and developed in future research.

If:

- since the 1970s and the oil shocks, lower demand and rising income inequalities were the main factors causing the following:
  – dismissal of rigid, higher fix costs and physical-capital-intensive methods of production such as Fordism,
  – the progressive development and diffusion of flexible, more human--capital intensive and higher variable than fix costs methods, such as Just in Time, Lean Management, Agile, etc., finding their final incarnation in knowledge-based organisation philosophy (Valente, 2020a, 2025a, 2025b, 2025c),
- the factors that allowed us to avoid the worst effects that could be expected to derive from sky-rocketing income inequalities, stagnation of sales opportunities and growth dynamics worsening, as those causing such tragic events characterising the first half of the 20th century as the two world wars and the 1929 crisis (Kalecki, 1971; Valente, 2025c), were:
  – the availability of an alternative neoclassical source of growth,
  – the above-mentioned process of management methods reorientation toward those, in which workers' qualifications, human capital, knowledge, and intangible assets play a more relevant role,

then the evolution of management methods, as well as picking up the most fitting one in a given context, depends on the situation that we are faced with at the country level, in a given sector and market. It, moreover, has a key role in affecting the aggregate environment evolution in the long-run.

There are, then, no best all-around practices or methods that can lead a firm to thrive independently of the context in which it is operating. The latter has instead to be thoroughly analysed, so that any quest aimed at finding such a method will be pointless. The strong dependence of the transition from industrial era to current KBE one from socio-political and historical events, moreover, should, according to the author, teach us that nothing lasts forever, and to ask ourselves whether we are not once again approaching a new turning point due to the nature and intensity of the events we are dealing with currently. As discussed elsewhere (Valente, 2025c), indeed, the very process of development of market economies does not seem to be linear. Instead, it presents some very long-term cyclical tendencies, leading to an alternation of unstable but innovative phases of development and discovery, such as the current KBE, and more stable and less innovative ones, such as those of the industrial era. The arguments presented thus support the idea that there is no such a thing as a final optimal state of

economic systems and firms functioning, but many possible ones. This can, then, lead both economists and management specialists to conclude that any millenarist and overly rhetorical formulation, such as that of traditional KBE definition critically discussed in this chapter should be avoided.

However, the analysis and alternative interpretation proposed by KBE exalts the role and relevance of the elaboration and refinement of the decision and management methods of firms over time. The uncoordinated trial and error process of firm's decision-making reveals itself as the main and most valuable resource that market economies possess. Sustaining that the emergence of different management methods and practices is the main process determining the overall shape of the aggregate environment, which economists try to describe in their models, has very deep consequences. It means, indeed, that one of the main shortcomings that both mainstream and heterodox theory are facing is the abstractedness of the theorical and deductive reasoning that they traditionally base upon. Although heterodox authors can be closer to such an approach than mainstream ones, developing a truly historical-deductive analysis of management evolution through time and its effects on the aggregate environment, one could help solve long-lasting controversies in much more pragmatical and practically meaningful terms. While, as stressed by both neoclassical and heterodox very influential authors (Solow, 2000; Pasinetti, 2000), much would change in economic growth theory, if – as partially attempted here – the hypothesis that income distribution is determined based on 19th-century neoclassical static theory assumptions will be lifted, the author personally considers contributing to that through the introduction of a historical-deductive analysis of management methods evolution as potentially very fruitful future research field for both economists and management specialists. Although the author has not yet achieved such a goal in this chapter, he hopes that the reflections presented here will encourage others to delve into the matter in the future.

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Chapter 15

# Towards Fostering Entrepreneurship through Freelancing

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## 15.1. Introduction

The rapid development of the Internet, resulting in the rise of Economy 4.0, has a significant impact on the relations and nature of employment as well as work performance (Grozdanovski, 2020). Currently, two fundamental phenomena might be observed that contribute to a change in employment relationships between workers and companies. The first is the significant fragmentation of work (Jetha *et al*., 2021); the second is the significant dissemination of contractual employment relationships.

Freelancing is one of the important tools that provides flexibility in the labour market. According to the Merriam-Webster Dictionary (2025), a "freelancer" can be defined as a person who "pursues a profession without a long-term commitment to any employer" and/or "acts independently without being affiliated with or authorised by an organisation." As the population of the European Union is ageing (Tzouganatou, 2022), there is a crucial need to employ workers from other countries, i.e. European non-member states, and/or highly populated by young workers countries from other parts of the World, e.g., Asia.

The main objective of the chapter is to present the background, motivation, and action that will be taken to foster entrepreneurship through freelancing in the Erasmus + project. The goal of the project is to help Higher Education Institutions (HEIs) extend their educational offer with digitally based Massive Open Online Courses (MOOCs) planned to prepare students, graduates, and individuals to start working as freelancers. Moreover, freelancing is particularly important for HEIs graduates working in IT related areas, and thus the project will contribute not only to the development of the digital education ecosystem (one of the priorities of the European Digital Education Action Plan (European Commission,

2020b), but also to the general efforts to fill the digital literacy skill gaps (Reddy, Chaudhary & Hussein, 2023). The project results will support both academic staff on how to prepare and run digitally delivered MOOCs, and the graduates and job seekers who have to deal with various obstacles in the labour market, which can be overcome by starting to work as a freelancer. By offering a broad analysis of freelancing and providing MOOCs about the foundations on how to become a freelancer, the project will address students and job seekers willing to better navigate the digital labour environment and in this way contribute to the digital transformation through the development of digital readiness to enter the labour market. In addition, the project aims to cultivate entrepreneurial skills and innovation among students, graduates, and other people who often possess broad theoretical knowledge but lack practical skills, hindering their positioning in the global job market. Freelancing may offer a pathway to developing a business idea with the potential to cross country borders.

The next section presents the project background, followed by the outline of the to-date project results. Then, the outline of the future work is presented. The final remarks are included in the Conclusions section.

## 15.2. Project Background

### 15.2.1. Partners

The partnership was formed on the basis of previous cooperation and combined expertise. The consortium consists of Krakow University of Economics, Poland, the leader (KUE), University of Kragujevac, Serbia (UNIKG), University of Granada, Spain (UGR), Lucian Blaga University of Sibiu, Romania (LBUS), Universitas Islam Indonesia, Indonesia (UII), and Zhytomyr Polytechnic State University, Ukraine (ZPSU).

It should be noted that the partnership consortium is geographically diversified (Europe, Asia) and the project team is multidisciplinary, which is highly beneficial for the realisation of the project objectives. Its members represent a diverse range of specialists, including economics (UNIKG), marketing (UGR), informatics/computer science (KUE, LBUS, UII, ZPSU), management (KUE, UII), and psychology (KUE).

### 15.2.2. Motivation

Partner universities are interested in supporting the development of entrepreneurial skills. The current project aims to explore a distinct niche, freelancing, with its unique and specific characteristics. Acquiring skills to become a successful freelancer is a crucial first step for future entrepreneurs' success. However,

as the Report on the state of Digital Decade 2023 indicates, there is still a need for an enhancement of digital skills in European society (European Commission, 2023). The freelancer market is no longer a market of cheap labour, and ultimately it will be a market for elite, innovative specialists, which Artificial Intelligence (AI) will not replace. Therefore, the project is needed not only for people who want to become freelancers but also for people who already function on the freelancer market and who need to keep pace with the changing work environment to stay competitive in the age of AI.

Helping future freelancers achieve the necessary skills reduces the risk of being unemployed and economically dependent. Data from the European Working Conditions Survey in 2021 showed that more than 31% of self-employed individuals categorised themselves as freelancers (Eurofound, 2024). Considering these data, it is important to prepare future employees, especially students graduating from HEIs, to work as freelancers and self-employed independent specialists. Freelancing may also be a good solution for the unemployed and elderly people, people with disabilities, people focused on maintaining work-life balance or re-entering the workforce after a longer brake, refugees, and migrants. For all these individuals, knowledge and skills disseminated by HEIs related to freelancing should foster entrepreneurial attitudes and lead to better positions on the labour market.

Supporting freelancing is one of the tools to improve the situation of the EU labour market, especially in those countries that struggle with high unemployment rates. Freelancing is an interesting option to test entrepreneurial skills, develop competences through diverse projects, and build an individual professional portfolio. It plays a vital role in the European and global workforce and is encouraged by the growing digitalisation of various professions and economic sectors. Moreover, many freelancers are leading the way in adopting innovative technologies, such as generative AI. Digital transformation is changing the structure of the labour market, reducing the need for routine and manual tasks while generating greater demand for professions focused on digital competences and new technologies (Urbaniec, Małkowska & Włodarkiewicz-Klimek, 2022). The perception of freelancing is changing and it is no longer primarily seen as a risky choice, but as a shift towards more work flexibility (Dunn at *et al*., 2023). The COVID-19 pandemic had a significant impact on freelancing, since it forced many people to start working remotely (Krutylin, 2024). Widespread layoffs and business closures prompted many individuals to seek alternative income through gig-based work (Ranasinghe, Ranasinghe & Rupasingha, 2022). As a result, many people became freelancers or started considering self-employment. Freelancing might be particularly attractive for generation Z, which has recently entered or

will soon be entering the labour market, for which maintaining work-life balance is very important (Waworuntu, Kainde & Mandagi, 2022). According to the *Upwork Impact Report* (UpWork, 2023), 52% of generation Z professionals and 44% of Millennials have chosen freelance work, attracted by the prospect of a flexible work schedule, greater autonomy, and the ability to pursue projects that are personally meaningful to them. Besides, personal networks significantly influence young people's self-employment orientation (Vacchiano, de Bel & Widmer, 2025). As the number of freelancers grows, especially in the technology and creative sectors, this reflects a broader shift towards digital work patterns and an increasing reliance on online platforms to access global employment opportunities (Damoska Sekuloska, 2022). On the other hand, HEIs are often not keeping pace with these changes in the labour market to a sufficient extent (Basson, Du Plessis & Brink, 2023).

For Ukrainians, working as a freelancer may be one of the ways HEI graduates choose to seek jobs in the extremely difficult conditions caused by the ongoing war. The participation of the Ukrainian Zhytomyr Polytechnic State University in the project consortium will facilitate the dissemination of the project results among other Ukrainian higher education institutions, supporting them in helping graduates find work through freelancing. In addition, many Ukrainians had been forced to leave the country and, as refugees, face various obstacles on the labour market in their host countries. Becoming a freelancer is one of the ways you can reduce the risk of unemployment.

Despite the European Union guidance regarding microcredentials and their potential to support employability (European Commission, 2020a), this concept faces some barriers to incorporating it into formal education – as the results of the ICAM project show (icam.uek.krakow.pl). Hence, the project is a continuation of the ICAM project in spreading the use of microcredentials. In summary, the project meets the current needs of students and graduates and will help them enter the current and future labour market. In addition, it will help a large number of other people to gain or enhance their self-employment skills and entrepreneurship skills. Finally, the project team is multidisciplinary and encompasses specialists with expertise in domains relevant to project objectives (economics, informatics, marketing, psychology), which guarantee the successful implementation of the project.

### 15.2.3. Project Goals

The project aims at improving entrepreneurial competences among students by preparing them to work as freelancers and to promote the concepts of life-long learning and microcredentials. The project results will be beneficial not only

for students, but also for other target groups, such as war refugees, unemployed people, people with disabilities who can work remotely but cannot commute to work, and people focused on maintaining work-life balance.

In order to achieve the project objectives, first, thorough research was conducted to obtain a rich picture of the global freelancer market. Secondly, an investigation was carried out to get an understanding of the key freelancer competences. Third, a test will be developed that can identify the competence gap that a person needs to fill to become a freelancer. Next, MOOCs will be developed that enable the enhancement of freelancer-related competences. Finally, a system of course certification will be developed based on the concept of microcredentials.

The project deliverables will include: (1) Defining the key success factors of becoming a global freelancer; (2) Providing the know-how for future freelancers, including topics such as working in a distributed team and managing it and improving work by the usage of generative Artificial Intelligence; (3) Accentuating the need to emphasise flexibility, diversity, and social inclusion while performing freelance work; (4) Increase awareness of the external factors that limit businesses in general and freelancing work in particular, i.e., legal and industry-specific compliance, as well as cybersecurity.

The project results will support innovation and entrepreneurial skills of students as the developed MOOCs will assist students in proceeding into the freelancer career, this way enhancing their entrepreneurial skills. In addition, a freelance career is not possible without having digital skills; in this way, the need for digital transformation is addressed through the development of resilience to digital readiness and capacity in the educational sector.

The main, tangible project results include: a competency test, MOOCs for the enhancement of freelancer competences, and a system of course certification that follows EU guidance in the area of microcredentials implementation. By having partners from diverse geographical and cultural backgrounds, cultural and multinational understanding will be broadened and strengthened the cooperation between partner institutions, which might result in further cooperation.

This cooperative project will bring added values to the fields of:

1. International perspective – as freelancing is a global concept, it is impossible to create valuable tools for developing freelancing competences that are based solely on one country.

2. A unique perspective to understand both the gathered data and to create valuable MOOCs – as the team consists of six partners.

3. A new perspective to the European understanding of freelancing – as one of the partners is based in Indonesia, a country that has invested a lot in creating a freelancer ecosystem during and after the pandemic.

## 15.3. Overview of Selected To-date Project Outcomes

### 15.3.1. Research Goal and Research Questions

The main goal of this project stage was to perform an analysis of the freelancing conditions and market on the European and global scale. This analysis is necessary for the next project stages which will be focused on competences (skills, knowledge, attitude) necessary to start working as a freelancer. Considering that freelancing crosses borders of countries and continents, graduates and job seekers choosing this professional path should be aware of the main characteristics of the European and global freelancing landscape and conditions. In addition, the analysis addresses the links between the cultural aspects of freelancing, pointing to how cultural dimensions can facilitate or hinder the professional activity of independent workers. More specifically, among others, the following research question was posted:

What is the gender distribution in the global freelance market and how do earnings compare between men and women?

The next chapters present some selected results of our research. The complete report can be found on the project website: https://enteef.uek.krakow.pl/results/.

### 15.3.2. Research Methodology

The research methodology included the collection of secondary and primary data. Secondary data collection encompasses literature review (scientific journal articles, books, conference papers and proceedings, industry reports, international organisation reports, government and policy documents). The primary data came from freelancer portal UpWork. UpWork was chosen based on its broad global reach, significant market share, and accessibility in participating countries, including Indonesia, Poland, Romania, Serbia, Spain, and Ukraine. Data were collected in January 2025 using web scraping and analysed using descriptive statistics.

### 15.3.3. Gender Differences in the Freelancer Market in the Selected Countries

In this part of the research, the focus was on data from Poland, Serbia, Spain, Romania, and Ukraine. In total, 16,524 freelancer profiles were obtained. The freelancers were categorised into three domains: IT Related, Writing and Translation, and Accounting and Law. Then they were divided according to experience level that was calculated on the basis of activity, i.e., length of business activity and number of completed tasks. Table 1 presents the data structure in relation to the domain and gender, while Table 2 presents the data structure in relation to experience and gender.

Table 15.1. Data Structure in Relation to Domain and Gender

| Domain | Gender | | | |
|---|---|---|---|---|
| | Male | | Female | |
| | No. | % | No. | % |
| IT Related | 7,584 | 77 | 2,265 | 23 |
| Writing and Translation | 1,291 | 38 | 2,114 | 62 |
| Accounting and Law | 1,510 | 46 | 1,760 | 54 |
| Total | 10,385 | 63 | 6,139 | 37 |

Source: own research.

Table 15.2. Data Structure in Relation to Experience and Gender

| Experience level | Gender | | | |
|---|---|---|---|---|
| | Male | | Female | |
| | No. | % | No. | % |
| Professional | 2,946 | 28 | 1,396 | 23 |
| Advanced | 2,960 | 29 | 1,583 | 26 |
| Beginner | 4,479 | 43 | 3,160 | 51 |
| Total | 10,385 | 63 | 6,139 | 37 |

Source: own research.

Table 15.3 presents freelancer average salary per hour (in USD) distributed accordingly to freelancer domain, experience, and gender. In IT Related domains and Accounting and Law, women earn less on average than men. Interestingly, in Writing and Translation women seem to be more experienced and earn more than male. It is also worth noting that the largest difference (to the detriment of women) occurs in Accounting and Law although it would seem that this is to be expected in IT. Besides, salaries in IT Related and Accounting and Law are very similar and much higher than in Writing and Translation – almost double; in both of these categories there is a visible difference in earnings regardless of experience and it is at a similar level.

Table 15.3. Average Salary by Gender and Profession (USD/Hour)

| Experience level | Domain | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | IT Related | | | Writing and Translation | | | Accounting and Law | | |
| | Male | Female | Diff. (%) | Male | Female | Diff. (%) | Male | Female | Diff. (%) |
| Professional | 48.6 | 38.9 | –25 | 29.0 | 29.7 | +2 | 46.6 | 36.2 | –29 |
| Advanced | 40.3 | 33.3 | –21 | 23.7 | 26.5 | +10 | 43.2 | 36.2 | –19 |
| Beginner | 32.3 | 26.5 | –22 | 19.6 | 20.1 | +3 | 30.2 | 25.3 | –19 |

Source: own research.

The results show that the freelancer market is diversified as far as gender is concerned and reflect the gender pay gap identified in the statistics of the European job market (Eurostat, 2025). Existing similarities may indicate that the differences in earnings between women and men are not influenced by the form of employment and that it is a phenomenon with a broader social background that requires further investigation.

## 15.4. Plans for the Future

### 15.4.1 Comparison of Europe and Asia

The comparison will be based on the previous analysis and will aim to identify the difference and similarities between the freelancer market in Europe and Asia. In particular, this comparison will include statistical data and legal conditions for acting as a freelancer. The important part of the analysis will address differences and similarities in the freelancer market in Europe and worldwide, with a special focus on the comparison between selected European countries and Indonesia as a sample Asian country. This comparison will focus on examining legal, economical, technical and social aspects taking into account both employers' and employees' perspective. The participation of UII from Indonesia, the country with a relatively high level of freelancing and a wealth of experience in creating supporting conditions for this type of professional activity, will improve the analysis of the present state and future perspective of freelancing in Asia compared to Europe. Present and future European freelancers will be able to broaden the view on the global competitiveness they have to face. The data sources for the analysis include EU statistics (e.g., Eurostat), data about freelancing on the country level, popular web portals and platforms for freelancers, and others.

### 15.4.2. Research on Freelancer Competences

At this stage of the project, the following tasks are planned:

1. Identification of key competencies for freelancers.
2. Creation of a competency assessment tool (CAT) dedicated to future freelancers.

The identification of key competencies will be done by conducting surveys among freelancers and company representatives that hire freelancers. These surveys will include deep interviews and questioning.

As a result of triangulation of data sources (collecting data from different sources), data collecting tools (collecting data with both qualitative and quantita-

tive tools), data analysis methods (for qualitative and quantitative data), a framework of freelancer competences will be developed that will include:

- universal competences – a base for effective work, such as problem solving, critical thinking, communication or time management,
- digital competences – connected with tasks performed as a freelancer,
- legal competences – necessary to function at the global labour market,
- specific competences – connected with requirements for freelancers (from different, most popular domains).

The purpose of CAT will be to serve as a placement test facilitating the selection and effective use (selection) of prepared MOOCs.

### 15.4.3 Development of MOOCs

There are plans to develop MOOCs that can support the promotion of entrepreneurship through freelancing. MOOCs' will be developed based on the results of previous project stages. The content of MOOCs based on the preliminary investigation and experience of the project team, it might be anticipated that the MOOCs should cover the following areas:

1. Personal branding and marketing for freelancers (how to become a freelancer in a global market: key success factors of a freelancer, reviews of freelancing platforms that already exist, suggestions on how to use them; mapping the general purpose and specialised platforms; checklist of the points that reliable platforms should have).

2. Financial planning and management for freelancers (negotiation skills and client relationship management; working in a multicultural environment: the need of understanding the culture, competences that are needed to work in a multicultural environment).

3. Time management and productivity techniques (e.g., digital support tools, generative AI).

4. Innovative problem-solving and creativity for freelancers.

5. Compliance regulations and cybersecurity for freelancers.

MOOCs will be developed to fit current trends in education, including gamification. MOOCs will incorporate various tasks, e.g., quizzes (Kahoot.com), activity-based exercises (https://www.geocaching.com/, https://de.actionbound.com/, https://www.scavify.com), virtual tours via companies/offices that need to be visited by a future freelancer.

In addition, a mechanism/process for certification issuance will be developed that fits the idea of microcredentials. The possibility of incorporating the microcredentials into the curricula at the partner universities will be investigated, e.g., in the form of credits for optional modules. The microcredential system

will probably be based on the OpenBadge system, which allows the distribution of badges to participants of MOOCs that will acquire planned competences. The OpenBadge system is widely used by top universities and top employees, and also those globally cooperating with freelancers. The systems that are to be used will be chosen from: Canvas Badge, Badger, BadgeCraft, Credly, or BadgeCert. The choice will be based on a multivariate analysis.

## 15.5. Conclusions

The project will have a significant impact on further internationalisation and networking of partner universities. The project team members then would improve and deepen their knowledge and competencies in the area of freelancing. Students will be educated on how to access and participate in this form of the global labour market, increasing their chances of part-time or full-time employment. Since freelancing is an entrepreneurial activity by its nature, it will contribute to the development of new businesses and stimulate entrepreneurial activity. Higher entrepreneurial spirit and employability of students would increase student's satisfaction and positive perception of partner universities. In addition, by acquiring relevant skills and cutting-edge knowledge that will make them competitive in the international market, it will boost their resilience and strengthen job security by expanding the opportunities available to them. On the other hand, it will attract other business actors and bring new cooperation opportunities, which will, together, produce positive spillover effects on the broader community.

The fact that the freelance labour market is a relatively new phenomenon caused an adaptation of new regulations just recently. The project could contribute by providing information on best practices and helping organisations and regulators develop more appropriate regulatory frameworks. This will additionally equip already active freelancers to find better solutions for the issues of their interest (e.g., legal rights, tax administration, or social security and retirement planning). It will significantly reduce barriers for new entrants in the market.

The benefits of the project could be identified at different levels:

- Local level: Local businesses could benefit from a pool of freelancers with diverse skills, potentially leading to collaborative projects and economic growth. The community may witness an increase in self-employed individuals who contribute to the local entrepreneurial ecosystem.
- Regional level: The project may serve as a model for other educational institutions in the region, inspiring them to integrate similar initiatives to promote entrepreneurship.

- National level: The project can contribute to national efforts in fostering entrepreneurship, aligning with government initiatives to support self-employment and economic development. National educational bodies and policymakers may find the insights from our project beneficial in shaping future educational strategies.
- European level: The project aligns with the broader European agenda of promoting entrepreneurship, self-employment, and life-long learning, contributing to the European Union's goals in innovation, economic growth, and education.

The participating organisations advocate and promote effective and efficient education, particularly in the ICT sector. They do so through alignment with current educational trends, changes in the business landscape, expectations of the labour market, and the use of innovative teaching. The proposed project on fostering entrepreneurial freedom through freelancing using MOOCs aims to create synergies between self-employment, green entrepreneurialism, leadership development, and digital competencies. It also gives the answer to the scarcity of qualified workforce in Europe, evident especially in the ICT sector. The innovation of the project comes mainly from combining current trends in education in general and higher education in particular, promoted by the EU. These include (1) microcredentials, i.e. short-term, certified and flexible courses aimed at helping people develop the competences needed for their professional development; (2) life-long learning, i.e. the entirety of formal and informal learning activities, undertaken by adults after leaving initial education; (3) gamification, i.e. introducing the typical concepts of gameplay (point scoring, competition with others, rules of play) are introduced to motivate employees for more effective and efficient work, as well as shape their professional careers, and (4) the development of online education tools and methods for the building of digital skills. It enables the extension of educational outreach and capacity-building efforts to a wider audience, addressing the current needs of the global freelance economy in Europe and Asia. The synergy between past initiatives of participating organisations underscores the commitment to fostering entrepreneurial skills and leadership among broader demographic groups, including freelancers.

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Chapter 16

# Conditions for the Implementation of BIM Technology in the Process of Construction Investment Management

Magdalena Belniak

## 16.1. Introduction

The digitisation of various aspects of daily life is a natural phase of the information revolution. In the construction sector, various information technologies have been used for a long time in design, execution, and asset management processes. However, it is the BIM standard that unifies these tools, enabling the creation of a comprehensive digital representation of a facility that encompasses all associated data. Building Information Modelling (BIM) is an information technology that facilitates the development of a multidimensional digital model of a structure, thus supporting efficient design, investment implementation, and lifecycle management, as well as continuous monitoring of its technical condition. In the context of Poland's digital transformation in the construction sector, BIM technology is of critical importance – particularly considering the requirements of the European Green Deal and ESG. Since 2023, BIM has been integrated with tools for carbon footprint analysis (European Construction Sector Observatory, 2023).

At the EU level, BIM has been incorporated into the "European vision of fostering innovation and stimulating economic growth through innovation and long-term efficiency of public investments," as documented by Anger, Lisowski, Piwkowski and Wierzowiecki (2015). The legal foundations for its application have likewise been enshrined in European law (Anger *et al*., 2015).

RQ1: To what extent does the standardisation of BIM requirements (e.g. IFC, BIM Standard PL) mitigate risks related to interoperability, liability, and intellectual property?

RQ2: What are the preliminary results of the implementation of BIM in the Polish public sector and what lessons can be drawn for SMEs and private investors?

The study adopts a qualitative and analytical approach, based on a critical review of secondary sources, policy documents, and a comparative analysis of

national and EU-level frameworks related to the implementation of BIM. This approach allows identifying the key institutional, legal and technical barriers that influence the digital transformation of the construction sector in Poland. First, a comprehensive critical review of the literature was conducted, focussing on academic publications, industry reports, and policy documents that address the legal, organisational, and technological aspects of BIM adoption. This review, characterised by its depth and breadth, allowed the identification of dominant themes, recurring challenges, and emerging opportunities related to digital transformation in the construction sector. Second, a rigorous comparative analysis was applied to highlight differences in the maturity of BIM adoption in EU member states. Particular attention was devoted to countries such as the United Kingdom and Finland, which are recognised as leaders in the implementation of BIM. This comparison, marked by its depth and insight, allowed the contextualisation of the Polish experience and the identification of potential areas for improvement in regulatory and organisational frameworks. Third, a robust case study approach was used to analyse selected pilot projects in Poland, including public infrastructure investments undertaken by the General Directorate for National Roads and Motorways (GDDKiA) and the Polish State Railways (PKP PLK). These cases, selected for their representativeness and relevance, demonstrate the initial impact of BIM deployment on project efficiency, error reduction, and procurement processes. Finally, the findings of these three stages were synthesised through a qualitative content analysis, which allowed the identification of cross-cutting issues, patterns of success and failure, and strategic recommendations for policymakers, construction firms, and SMEs involved in the adoption of BIM. It is essential to acknowledge that this research has several limitations, including its focus on a specific region and reliance on secondary data, which may impact the generalisability of the findings.

## 16.2. Barriers and Challenges to BIM Implementation in Selected Countries

According to Cartlidge (2018), the main challenges associated with BIM can be classified into two categories. Similarly, Fan, Lee, Chong, and Skibniewski (2018), in their analysis of the legal aspects of BIM, highlight the complexity of contractual and regulatory issues (Cartlidge, 2018; Fan *et al*., 2018):

- Legal challenges, encompassing primarily:

1. Liability issues for defective or non-compliant designs.

2. Ownership questions – specifically, determining who holds title to the overall design versus who owns the data embedded within it.

- Cultural factors arise from the diversity of national and organisational contexts in which BIM is implemented, particularly in terms of the maturity of technical cultures and attitudes toward innovation.

Legal challenges related to BIM are significant, focussing on adapting copyright and intellectual property legislation to the requirements imposed by electronic building models. An online survey of the UK's 100 largest construction firms identified five principal legal issues that emerged during BIM deployment, primarily related to intellectual property rights in the BIM model and their protection.

Olatunji (2011) notes that in developing countries, the adoption of BIM necessitates overcoming both technological and cultural barriers. Kuiper and Holzer (2013) note that effective BIM adoption depends on the ability of project teams' to communicate and integrate across disciplines, highlighting the crucial role of collaboration in BIM implementation. Hong *et al.* (2016) identify managerial support and technical competencies as key factors influencing BIM adoption, while Eadie *et al.* (2013) report that BIM can improve project management efficiency throughout the investment lifecycle. Aranda-Mena *et al.* (2009) argue that BIM implementation necessitates strategic change management and process redefinition throughout the project lifecycle.

Li, Greenwood and Kassem (2019) identify several critical barriers to BIM adoption in SMEs, including high implementation costs, insufficient training, lack of client demand, and low industry awareness.

Rayner and Al-Hajj (2015) emphasise that BIM implementation requires a profound cultural shift within design organisations. To achieve the widely recognised – yet essential – cultural transformation toward BIM as a new paradigm for construction projects (Government Construction Client Group, 2011, p. 84), the following factors are indispensable:

- The systematic education and professional development of specialists capable of executing BIM-based projects and managing the associated processes effectively.
- The formation of best-practice groups that utilise expert knowledge and verified experience and the dissemination of these practices to mitigate the controversies surrounding BIM within the construction sector.
- The reinforcement of pro-innovation attitudes in the construction industry.
- The elevation of legal awareness among construction professionals is fundamental to their full professionalisation and the integration of BIM at the contractual stage.

These observations, reflecting the conditions for the adoption of BIM in advanced countries in this domain, demonstrate that the implementation of BIM

in construction projects is not without obstacles. These obstacles stem primarily from interrelated legal factors (the misalignment of existing law with BIM's contractual and operational specifics) and cultural factors (the sector's limited willingness to embrace advanced technologies such as BIM, which is itself a consequence of insufficient orientation to innovation). The technical and tool-related issues are relatively minor in comparison. The subsequent sections of this chapter will further explore the legal impediments – particularly in the realms of copyright and intellectual property protection – as well as the cultural and human resource deficiencies, through the lens of international literature.

## 16.3. Lack of Unified BIM Requirements

BIM is indispensable wherever communication among multiple parties is required. Consequently, there is an unequivocal need for standardisation and harmonisation of requirements to prevent miscommunication and bottlenecks among project stakeholders. The absence of standardised protocols can lead to legal issues – such as the nonconformity of contracts with BIM workflows – which in turn can lead to contractual disputes, difficulties in apportioning liability for design errors or data-transmission faults, data loss or misuse, and unauthorised exploitation of information (Aranda-Mena *et al*., 2009). Contractual complications often arise from divergent interpretations of terms and concepts by the contracting parties. Thus, it is essential to establish standardised requirement forms and consistent terminology for contracting BIM-based construction projects (Zima, Plebankiewicz & Wieczorek 2020).

Thein (2011) proposed the Industry Foundation Classes (IFC) model as a neutral file format to support BIM interoperability. Through IFC, data can be exported to applications used in subsequent stages of the building's life cycle, including facility management and operation (Aranda-Mena *et al*., 2009). The principal characteristics of the IFC format include (Aranda-Mena *et al*., 2009):

- An embedded repository of semantic information on building elements and their geometries, allowing the definition of attributes and the identification of inter-element relationships.
- Interdisciplinary coordination of building information models, covering architecture, structural engineering, finishes and equipment.
- Data unification and exchange among IFC-compliant applications.
- Reusability of data for analyses and other tasks.

Experts recommend IFC for widespread adoption in the creation of BIM models due to its open nature, standardised data exchange protocols, and compliance with essential interoperability requirements. Empirical studies –

such as the evaluation of the utility of IFC in Canadian contexts by Golabchi and Kamat – and conceptual frameworks for effective IFC utilisation in interactive virtual environments (Dris, Gouranton & Arnaldi 2016) corroborate its practical applicability. However, it is essential to note that these recommendations remain grounded in extensive practical experience.

The prominence of IFC is poised to increase as more countries legally mandate BIM and require its use. Finland was the first to introduce such a mandate for public procurement in 2017, currently employing IFC2x3, although IFC4 has already been published (*Building Smart Finland*, n.d.). The broader international uptake of IFC is a matter of time.

## 16.4. BIM Efficiency and Project Scale

Many authors examined the implementation of BIM in transdisciplinary environments. However, from a purely commercial point of view, adopting BIM Level 2 in small-scale construction projects may exceed their financial capacity. The literature suggests that this need not be prohibitive if the latest technological features are eschewed. Employing basic BIM software in lieu of traditional 2D draughting and 3D modelling tools can reduce project-design durations and associated expenditures, potentially yielding lower costs than conventional methods (Aranda-Mena *et al*., 2009).

Faghihi and Kang (2019) presented a case study of a project of 4.2 million USD to quantify the benefits of BIM deployment. Rossiter (2017) further emphasises that BIM adoption is feasible for smaller projects. Although the cost savings identified by these authors are moderate, they substantiate the potential of BIM for economies of scale when applied more broadly and refined over time. Digital Construction Today (2017) also notes that small and medium-sized enterprises can successfully implement BIM.

## 16.5. Insufficient Number of BIM Experts

Smith and Tardif (2009) proposed a strategic framework for the implementation of BIM within organisations. Gu and London (2010) delineated the varied expectations of BIM across technical disciplines, recommending that candidates for BIM-related roles should be afforded the following:

- Exposure to BIM practices at every stage of project delivery and throughout the building lifecycle.
- An understanding that BIM demands close collaboration among all project stakeholders.

- Opportunities to accumulate hands-on BIM experience, including risk assessment and decision-making scenarios.
- Familiarity with the entire suite of tools used in BIM workflows.

Although the principle of combining theory with practice is well established, in the context of BIM, it is indispensable: the efficacy of technology depends on the professionalism and technical competence of its practitioners. Only highly qualified specialists can ensure the quality of implementation necessary to realise, in the long term, the promise of BIM of reduced total project costs (Zima & Mitera-Kiełbasa 2021).

## 16.6. Copyright Issues

Recent studies of BIM adoption processes in the construction sector consistently identify copyright and intellectual property concerns as the main barrier. Four central issues arise:

1. The absence of an established ownership model for the electronic building model, that is, determining who holds rights to the model versus the individual data elements contributed by various authors.

2. The proprietary status of the BIM model within contractual relationships, e.g., which party is unambiguously recognised as its owner under the contract.

3. Liability for defects in design when BIM standards are lacking and ownership disputes arise over the models used.

4. Enforcement of intellectual property rights and protection of proprietary data embedded in BIM models.

Anger *et al*. (2015) discussed the foundational assumptions for the deployment of BIM in Poland, emphasising the need to reconcile authorship rights with collaborative, data-centric workflows.

## 16.7. Preconditions and Initial Outcomes of BIM Implementation in the Polish Public Sector Policy Framework (2019–2020)

In 2019, the Ministry of Development (MR) adopted a roadmap for advancing Building Information Modelling (BIM), culminating in the publication of the PL BIM Standard – a document intended to consolidate previous efforts and catalyse broader adoption of BIM in subsequent years. As Wiktor Piwkowski, Secretary General of the Polish Association of Construction Engineers and Technicians (PZITB), asserted, the PL BIM Standard "represents a significant advance in BIM application within Polish construction, and its utilisation in pilot invest-

ments will greatly accelerate implementation processes. Consequently, widespread BIM deployment in Poland by 2025 is feasible" (Piwkowski, 2020).

MR's post-2019 actions aimed to launch a UK-style pilot programme for public-sector construction projects that requires BIM. BIM Standard PL was designated the recommended standard for contracting authorities and was envisaged as the basis for the PL BIM standard use of BIM in both public procurement and private sector contracts from 2025 onwards. On 13 November 2019, MR (now the Ministry of Development, Labour and Technology – MRPiT) convened stakeholders – including MRPiT as the project beneficiary, the EU Structural Reform Support Service as a potential client and PricewaterhouseCoopers (PwC) as the project executor – to inaugurate the BIM implementation initiative. PwC outlined the project's objectives, with an initial focus on integrating Building Information Modelling (BIM) into Poland's public procurement system for construction works. Participants pledged full commitment, though MR representatives cautioned that long-term digital platform strategies remained subject to future political leadership and that inter-ministerial coordination could pose challenges.

The inaugural workshop (maximum 30 participants per group) was held on the same day, gathering investors, designers/consultants, and general contractors to define the overall framework of the project (MRPiT, 2020). Key resolutions included:

- Pilot Project Alignment: The pilot would be linked to the National Housing Construction Programme, with specific sub-programs to be determined. All deliverables would comply with the new Public Procurement Law, effective 1 January 2021 (Journal of Laws 2019, item 2019; amendment of 27 November 2020, Journal of Laws 2020, item 2275).
- Communication Strategy: MRPiT would lead the project communications and all public updates required approval from the SRSS.
- Digital Platform Development: PwC will deliver a demonstrator platform by the end of 2021, accessible to project stakeholders for review and feedback, with final approval by MR.
- BIM Roadmap: A national BIM Roadmap would encompass both the public and private sectors, recommend BIM-mandated contracts, and identify public funding sources to support SMEs – drawing on the UK's support framework for small contractors.

These foundational decisions informed subsequent work, resulting in concrete implementation tools.

*From Pilot to Obligation* (*2023–2025*)

As of June 2024, Poland had entered a new phase of BIM implementation: selected public procurements now require the use of BIM. MRPiT, in collabora-

tion with industry partners, continually updates the BIM Standard PL, which reached version 2.0 in 2023, aligning closely with PN-EN ISO 19650 – streamlining tender procedures and enhancing stakeholder communication. Since early 2023, pilot projects in the transport infrastructure sector (road and rail) executed by the General Directorate for National Roads and Motorways (GDDKiA) and PKP PLK have demonstrated compelling results: a 25% reduction in design errors and an 18% shortening of procurement cycles. In 2024, the national BIM Digital Platform was launched, serving as a repository for models, specifications, and document templates for both public entities and small to medium-sized enterprises (SMEs).

*Remaining Challenges*

From a systemic perspective, the full integration of BIM in Poland still depends on:

- expanding the pool of BIM-qualified specialists,
- establish a unified BIM competency-certification system (under development by the Polish Committee for Standardisation),
- intensifying BIM education in universities and vocational schools.

With the pilot phase concluding and mandatory BIM use beginning in designated public procurements as of January 2025, Poland stands at the threshold of a new era: BIM is no longer an innovation, but a construction standard (Borkowski, Drozd & Zima, 2024).

The findings presented above provide the basis for a broader discussion on the structural and institutional conditions that shape the implementation of BIM in Poland. This transition point also highlights the need for a more in-depth examination of how regulatory, technical, and organisational frameworks interact to sustain the momentum of digital transformation within the construction sector.

## 16.8. Conclusions and Recommendations

This study aims to examine the conditions for the implementation of BIM technology in the Polish construction sector, with a particular focus on the context of the broader European Union. The analysis provided evidence-based answers to the two research questions posed at the beginning of the article.

Regarding RQ1, the findings suggest that standardising BIM requirements – particularly through instruments such as IFC protocols and the emerging BIM Standard PL – provides a crucial mechanism for mitigating risks associated with interoperability, liability, and intellectual property management. These protocols and standards, which are internationally recognised, play an significant role in

ensuring that digital models and data can be exchanged and understood across different software platforms and project phases. However, while these frameworks establish the necessary foundation for digital integration, their enforcement in Poland remains fragmented. The persistence of legal uncertainties and uneven application across projects continues to generate hesitation among industry stakeholders, thus limiting the full potential of standardised approaches.

Regarding RQ2, the study shows that the preliminary outcomes of BIM adoption in Polish public sector pilot projects are predominantly positive. These initial results provide reassurance about the potential benefits of BIM, which include improved efficiency of procurement procedures, improved error detection, and stronger communication between stakeholders. However, the diffusion of these benefits to the private sector, especially SMEs, remains constrained. Many small and medium-sized firms lack the resources, experience and digital maturity to adopt BIM effectively, which exacerbates the disparities between large and small market players.

Taken together, the evidence suggests that Poland is making progress in the digital transformation of its construction sector, but significant structural, organisational, and regulatory challenges remain. These challenges include the need for more rigorous enforcement of standardisation frameworks, the lack of targeted capacity-building measures for SMEs, and the absence of policies that enhance digital competencies across the industry. Addressing these challenges will be crucial to accelerate the implementation of BIM and contribute to a more competitive, innovative, and sustainable construction sector within the European Union.

This study is not without limitations. It relies primarily on secondary data and a review of the literature, which restricts the empirical depth of the analysis. Furthermore, the selected timeframe (2017–2022) captures only the early phase of BIM implementation in Poland, while more recent initiatives are still in progress. Future studies should include direct interviews with key stakeholders and longitudinal assessments of BIM projects to provide a more comprehensive understanding of the process.

In conclusion, while Poland's construction industry is taking gradual steps toward digital maturity, the persistence of systemic gaps, such as the uneven application of standardisation frameworks and the lack of support for SMEs, underscores the need for more structural adjustments. A more substantial commitment to standardisation, combined with targeted support for SMEs, could accelerate BIM implementation and contribute to a more competitive, innovative, and sustainable construction sector within the European Union.

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