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ECONOMIC RELATIONS IN TIMES OF GEOPOLITICAL UNCERTAINTY – POLAND AND UKRAINE

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Abstract

The main objective of the study is to identify the state of economic relations between Poland and Ukraine since the early 1990s, taking into account mutual trade (also within the framework of the LBT) and Poland's investment involvement in Ukraine. The study uses a statistical-descriptive method. Based on the analyses, it is concluded that the potential of bilateral economic relations has not been fully exploited so far. Although trade has been developing over the years, it has encountered certain difficulties. The difficult economic situation in Ukraine has become crucial. In light of this conclusion and the currently uncertain geopolitical situation, the realisation of Polish-Ukrainian economic cooperation, including trade, in the coming years appears to be closely linked to the reconstruction of Ukraine's infrastructure.

**RELACJE GOSPODARCZE W DOBIE NIEPEWNEJ
SYTUACJI GEOPOLITYCZNEJ – POLSKA I UKRAINA*****Izabela Zabielska***Wydział Nauk Ekonomicznych
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Słowa kluczowe: współpraca gospodarcza, handel zagraniczny, mały ruch graniczny, Polska-Ukraina.

A b s t r a k t

Zasadniczym celem opracowania jest zidentyfikowanie stanu relacji gospodarczych Polski i Ukrainy od początku lat 90. XX w., z uwzględnieniem handlu wzajemnego (również w ramach małego ruchu granicznego) i zaangażowania inwestycyjnego Polski na Ukrainie. W badaniu wykorzystano metodę statystyczno-opisową. Na podstawie analiz stwierdzono, że potencjał dwustronnych stosunków gospodarczych nie był dotychczas w pełni wykorzystywany. Co prawda na przestrzeni lat wymiana handlowa się rozwijała, napotykała jednak pewne trudności. Kluczowego znaczenia nabrała trudna sytuacja gospodarcza na Ukrainie. W świetle tego wniosku i niepewnej obecnie sytuacji geopolitycznej realizacja polsko-ukraińskiej współpracy gospodarczej, w tym handlowej, w najbliższych latach wydaje się ściśle związana z odbudową infrastruktury Ukrainy.

Introduction

States have been cooperating with each other practically since time immemorial, both in times of war and peace. The type of cooperation varies in scope and purpose from global to regional, bilateral or multilateral. Such cooperation, characterised by a multiplicity of linkages and interactions, plays an important role, especially in contemporary international relations (Zabielska, 2020). It triggers the active participation of states interested in interacting and develops partnerships. It also serves to raise welfare and social satisfaction. As a result, it contributes to the creation of economic ties between partners, who are increasingly active in various arrangements, including trade, investment, monetary and financial or institutional (Jaworska & Kuchta, 2017).

In this context, the conditions and development of cooperation between Poland and Ukraine are interesting. On the one hand, there is the occurring cultural proximity and mutual penetration, similarity of consumer tastes and language. On the other hand, mutual distrust and perception through the prism

of political affiliation (Chodubski, 2012)¹. The above, as well as changes in the European order and the collapse of the Eastern Bloc (late 1980s/early 1990s), determined the direction of bilateral relations between these countries (Zięba, 2000, p. 27). Furthermore, for Poland, the potential for economic cooperation with Ukraine lies, *inter alia*, in its large internal market (45.5 million consumers), its natural resources (iron ore, coal, natural gas, oil; fertile soils) and its educated and relatively cheap labour force. Moreover, its favourable location between the markets of the European Union (EU) and the Commonwealth of Independent States (CIS), makes Ukraine an attractive location for investment – export platforms (Błaszczuk-Zawiła, 2015).

Polish-Ukrainian economic cooperation, including trade, has so far been the subject of relatively few studies. Analysis of the relationship has mainly focused on political and historical issues. Indeed, an increased interest in economic issues began with the period of negotiation of a new EU-Ukrainian agreement providing for the creation of a Deep and Comprehensive Free Trade Agreement (DCFTA), the annexation of Crimea and the Russian occupation. The current geopolitical situation has added a new dimension. This article complements previous analyses of economic, including trade, cooperation between Poland and Ukraine since the early 1990s, including the facilitation of the Polish-Ukrainian border crossing.

Therefore, the main objective of this discussion is to identify the state of economic relations between Poland and Ukraine since the early 1990s, taking into account mutual trade (also within the framework of the LBT) and Poland's investment involvement in Ukraine.

Description of Research Methodology

Analytical and descriptive methods based on a critical literature review and empirical analysis on key issues in economic cooperation, including trade, between Poland and Ukraine were used. Qualitative data were obtained from the literature on the subject. They concerned Polish-Ukrainian economic relations since 1992 and Poland's involvement in building them. Necessary information on the topic in question was therefore gathered and subjected to selection (theoretical analysis and synthesis of the issue). In doing so, relevant legal acts and official documents relating to Polish-Ukrainian economic cooperation, including trade, and local

¹ Poland and Ukraine have a rich common history. Both countries have been neighbours, which naturally fosters mutual contacts and influences and an interweaving of friendship and enmity, e.g. the period of struggle of both nations for independence after the end of World War I, the Polish-Ukrainian struggle against Soviet Russia, anti-Ukrainian aggression or attacks on Poland (during World War II). However, cooperation was born between the states and, as a result, they began to appreciate the importance of their neighbour in their own interests (Kroll, 2015).

border traffic were used. In turn, quantitative data came from the Central Statistical Office, the Main Headquarters of the Border Guard, the Ministry of Development and Technology and the Embassy of the Republic of Poland in Kiev (data from the Ministry of Foreign Affairs of the Republic of Poland) – they concerned the value of imports and exports of goods of Poland and Ukraine (starting from the 1990s) and the number of crossings of the Polish-Ukrainian border, including the LBT since its introduction, i.e. since 2009.

Characteristics of Economic Relations between Poland and Ukraine

Geopolitical conditions are of major importance in the economic relations between Poland and Ukraine. The political order in Europe, established after World War II, sanctioned the expansion of the borders of the former Soviet Union (including Ukraine, Belarus and the Baltic states) and the creation of a belt of dependent states (Kawałko 2011, p. 36). The internal (separated by the Polish-Soviet border) and external empires thus created became the exclusive sphere of influence of the USSR until its collapse in 1991 (Rościszewski 1993, p. 46-48; Sukhoruchko 2022, p. 71-77). After this period, a new phase in Polish-Ukrainian relations began, despite belonging to different ideological and political-economic blocs. In a changing environment, the countries built relationships and regional structures. The importance of cooperation (including trade) in the development of good neighbourly relations was emphasised (Traktat o dobrym sąsiedztwie, 1992), and this was reflected in the establishment and creation of joint institutions and undertakings, the exchange of experience, consultancy, joint scientific and research cooperation or exhibitions and trade fairs (Umowa o współpracy gospodarczej, 2005)². Such regulation of economic relations was indicative of a pragmatic approach to concluding agreements aimed at strengthening the socio-economic potential of both countries.

The process of institutionalisation of economic contacts began as early as 1993. During the Polish-Ukrainian Economic Forum, the Polish-Ukrainian Mixed Commission for Trade and Economic Cooperation was established, then under the Economic Cooperation Agreement of 2005. Polish-Ukrainian Intergovernmental Commission for Economic Cooperation³. Mutual cooperation was also implemented within the framework of the Polish-Ukrainian Chamber of Commerce. Its aim became the development and promotion of bilateral business cooperation. Within the framework of the Polish Business Center in Kiev and the

² Poland and Ukraine were covered by the Most Favoured Nation (MFN) clause in customs and taxation until 2004, which ceased to apply with Poland's accession to the EU.

³ The Commission, within the framework of various working groups, is preparing proposals for the development of bilateral relations to eliminate barriers to cooperation.

Ukrainian Business Center in Warsaw, comprehensive support was provided to Polish entrepreneurs investing in Ukraine and Ukrainian entrepreneurs operating in Poland. In addition, market formal and administrative barriers on both sides of the border are monitored by the Polish-Ukrainian Market Analysis Centre.

In addition, within the framework of the Polish-Ukrainian Intergovernmental Coordination Council for Interregional Cooperation, regions of Poland and oblasts of Ukraine cooperate. Regional cross-border activities, modernisation of crossings and improvement of border security are coordinated (Umowa o stosunkach prawnych, 1994). Through joint initiatives, the parties aim to equalise the standard of living of the inhabitants by increasing opportunities for the movement of goods, people from the border areas as well as capital. Catalysts for cooperation are also the Euroregions operating in the borderlands of both countries – Karpacki and Bug. Projects implemented by individual EU programmes are also an important instrument (Vysochan & Vlodek, 2020).

The next chapter of mutual economic cooperation took place after Poland's accession to the EU in 2004. Poland began to present itself both as a state offering bilateral cooperation and as a 'part' of the agreement with a more extensive range of opportunities (*Polska-Ukraina...*, 2021)⁴. It also started political efforts for cooperation and integration of Ukraine into the EU⁵, and with Sweden became an initiator of the Eastern Partnership programme⁶ (Vysochan & Vlodek, 2020). In 2004, the European Neighbourhood Policy (ENP) was also adopted (European Commission, 2010) and within its scope, the terms and conditions of the EU's cooperation with its new neighbours just after enlargement. At that time, the need to develop a different path of dialogue with various countries, including Ukraine, became apparent. In 2007, a joint declaration on a new dimension of the strategic partnership was signed, as a continuation of the partnership concluded in 1996. This was complemented by a 'cooperation roadmap' for the following years. In March 2014, the EU-Ukraine Association Agreement was concluded. Under it, a free trade area (the so-called DCFFTA; the agreement came into full force on 1.09.2017) was introduced in 2016 (*Ukraina. Notatka gospodarcza...*, 2023) and certain requirements were imposed on Ukraine⁷.

A great opportunity has opened up for businesses, Polish and Ukrainian, with the abolition of customs duties and non-tariff barriers, attracting new consumers

⁴ Since 2004, Polish trade relations, as an EU member, have been based on agreements between the EU and Ukraine.

⁵ The Ukrainian population wanted to become a member of the EU, while the hostile authorities at the time did not sign the association agreement. A wave of protests erupted. As a result, early elections were held and the new president set the goal of rapprochement with the EU (Horvath, 2023).

⁶ The Eastern Partnership was established in 2009 (European Commission, 2009) and was positively received by the Ukrainian authorities as an offer more profiled to the needs of Ukraine than the ENP (Bazhenova, 2019, p. 73).

⁷ The idea was to improve energy efficiency (Ukraine used a lot of energy to produce goods and services) and export facilitation – so more border checkpoints were introduced.

and increasing production and exports. There was also a new declaration referring to the strategic partnership between Poland and Ukraine as a modern formula for implementing economic relations and working towards economic security. Moreover, in 2017 the Union accepted visa-free travel for the Ukrainian population (and a little earlier, in 2009, the MGR was introduced)⁸ (*Umowa między Rządem Rzeczypospolitej Polskiej a Gabinetem Ministrów Ukrainy o zasadach małego ruchu granicznego*, 2009), which facilitated regular crossing of the EU's external land border. The Protocol to the MRG Agreement was also in force, introducing significant changes (*Wielki mały ruch...*, 2016)⁹.

As part of the interaction between the Polish and Ukrainian economies, a number of meetings on LNG transit took place in 2019 (Vysochan & Vlodek, 2020). A supply diversification agreement (USA, Poland, Ukraine) and a letter of intent for the extraction of Ukrainian gas resources (PGNiG and Naftogaz; 2021) were signed. A declaration on cooperation on the basis of a strategic partnership and economic agreements were also worked out: participation of PGNiG in the privatisation of the Ukrainian energy sector and trade between the Odessa and Gdansk ports. Bilateral cooperation on tax information exchange was intensified to effectively combat VAT fraud (in 2020). A revision of the EU-Ukraine DCFFTA agreement was launched in 2021. In order to provide additional support to Ukraine (including its exports), temporary full trade liberalisation was allowed and protection instruments were suspended until 5.06.2024 (Regulation 1077..., 2023; *Notatka gospodarcza...*, 2023).

Poland's share of the Ukrainian market is steadily increasing. Polish chambers of commerce attribute a high growth potential to the Ukrainian economy (dependent, among other things, on foreign investment¹⁰). And Polish entrepreneurs are perceived positively on the Ukrainian market, which promises

⁸ According to the agreement, the Polish border area comprises 97 municipalities in 19 districts, with a total area of 13.4 thousand km² and a population of 820.7 thousand. The Ukrainian border area comprises 23 districts, with a total area of 24.0 thousand km² and a population of over 1.2 million.

⁹ An LBT border crosser can stay in the border area for up to 90 days without interruption (previously 60 days). An applicant for a second and subsequent LBT permit is exempt from the consular fee. The obligation to have health insurance has also been abolished.

¹⁰ According to NBP data, at the end of 2022, Polish direct investment in Ukraine amounted to USD 266.6 million (at the end of: 2021 – USD 571.2 million, 2020 – USD 337 million and 2019 – USD 352.5 million). In turn, Polish foreign investments in the Ukrainian economy, according to the National Bank of Ukraine, amounted to USD 227.9 million as of 1.01.2022. After a period of decline between 2013 and 2017, Polish investments remained stable (USD 777.7 million as of 1.01.2019, USD 880.5 million as of 1.01.2020 and USD 858.5 as of 1.01.2021). Approximately 2,000 SMEs with Polish-Ukrainian capital and approximately 2,900 with Polish capital were operating on the Ukrainian market by 24 February 2022. The most important Polish investments in Ukraine were in the financial sector (banking and insurance), while Polish investments in the Ukrainian manufacturing sector included the construction, automotive, furniture and clothing sectors. In turn, the balance of Ukrainian direct investment commitments in Poland at the end of 2022 amounted to USD -159.8 million. In 2022, the inflow of Ukrainian investments to Poland is estimated at EUR 220.1 million. According to the National Bank of Ukraine, as of 1.01.2021,

opportunities for the development of lasting cooperation (Glinkowska, 2019; Peciakowski & Gizinski, 2021, p. 183).

Since 2022, given the situation in Ukraine, there has been an intensification of Polish-Ukrainian political and economic contacts¹¹. Current economic relations are supported by the Polish Investment and Trade Agency and its Foreign Office in Kiev (PAIH, 2023). A Polish-Ukrainian business support team has been established to coordinate the relocation of Polish companies located in Ukraine and to assist in finding new markets for products hitherto exported mainly to the east. Similarly, the Polish Ministry of Development and Technology covers with partial funding some promotional and investment projects on the Ukrainian market (*Instrumenty finansowe*, 2023). Support for entrepreneurs is also provided by the Korporacja Ubezpieczeń Kredytów Eksportowych S.A. (*Raport: 30 lat polskiego eksportu*, 2021) and concerns the insurance of receivables in export contracts with Ukrainian counterparties. Assistance is also provided by Bank Gospodarstwa Krajowego within the framework of the “Financial Support for Exports” programme (*Finansowanie eksportu*, 2023) and the Union of Entrepreneurs and Employers (*Ukraina. Notatka gospodarcza...*, 2023).

In addition, for legally residing Ukrainians on the territory of the Republic of Poland, provisions have been introduced to enable the establishment of economic activity (Ustawa z dnia 12 marca 2022 r. o pomocy...). In the period 24.02.2022-17.10.2023, 42,392 applications for registration of business activity for Ukrainian citizens in Poland were received. Of the 2.659 million active business activities in Poland, 1.5% (40,959) are companies owned by persons with Ukrainian citizenship. They are mainly active in construction, information and communication and services. In the first three quarters of 2022 45% of newly registered companies with foreign capital were entities with Ukrainian capital (3.6 thousand). And the Polish-Ukrainian border, since the beginning of the war, has been crossed by approximately 16 million people, of whom approximately 1.5 million Ukrainians – refugees – are still in Poland (*Ukraina. Notatka gospodarcza...*, 2023).

Ukrainian direct investment in the Polish economy amounted to USD 7.5 million (*Ukraina. Notatka gospodarcza...*, 2023).

¹¹ An economic consultation was held in June 2022. An agreement on trade support instruments was signed. The meeting of the Commission for Economic Cooperation continued on the issues of: smoothing the exchange of goods and the movement of people across the Polish-Ukrainian border, cooperation for the reconstruction of war damage, cooperation in agri-food and transport, and the import of Ukrainian cereals to Poland.

Polish-Ukrainian Trade – the Essence¹²

Due to the differences in political system solutions and the level of economic development in Poland and Ukraine, the implementation of trade exchange was not an easy task. Cooperation was further hampered by the non-complementarity of the two economies and the lack of a legal basis at the beginning of mutual cooperation. The focus was mainly on political issues rather than issues relating to the economy, which significantly limited the implementation of trade contacts. In addition, the deepening economic crisis following the collapse of the USSR in 1991 negatively affected the Ukrainian economy. During this period, trade turnover amounted to less than USD 180 million. Poland was Ukraine's 2nd trading partner outside the CIS. It exported fuels, energy, electromechanical and light industry products to Ukraine and imported from Ukraine – raw materials for the metallurgical industry, chemical industry and food industry products (Kuspys, 2008).

In the following years, trade turnover increased. Poland advanced among Ukraine's economic partners (after Russia, Germany and Italy), exporting mainly agri-food products and importing from Ukraine – coal and iron ore. The economic downturn in Ukraine in the second half of 1998 negatively affected further Polish-Ukrainian cooperation and Polish exports (down 40%). There was a significant gap between the value of exports and imports, which gradually widened. This was due to the rate of development of both economies and the commodity structure of trade at the time. Until the mid-1990s, Polish exports to Ukraine were dominated by mineral fuels and related materials, and since 1996 by – manufacturing and industrial goods. A successive increase in exports of manufacturing with a higher degree of processing, e.g. machinery and equipment, was observed only from 2001, and from 2003 – products of the chemical industry. As a result, by 2004, 8 commodity groups dominated, together accounting for 80% of the value of Polish exports to Ukraine (products of the electrical machinery industry, light industry, chemical industry, base metals, agri-food products, wood, paper, cardboard). Imports from Ukraine were dominated by energy and metallurgical raw materials. Ukraine became the largest recipient of Polish goods among CIS countries and Poland's 9th partner in total exports (with a share of 3%). Poland, in turn, was Ukraine's 7th partner in exports and 4th in imports (Kuspys, 2008).

Poland's accession to the EU in 2004 did not have a major impact on the shape of Polish-Ukrainian cooperation; however, it resulted in a decrease in Ukrainian exports to Poland (mainly minerals and black metals). This was a consequence

¹² This part of the discussion is based on statistical data from sources such as: 1) Economic Handbook: Poland in Ukraine. Bilateral relations (2023); 2) Foreign Trade Statistical Yearbook (for the years 2007-2023) (2007-2023); 3) Border traffic and flow of goods and services on the Polish-Ukrainian border in 2009 (2010); 4) Border traffic and expenditure of foreigners in Poland and Poles abroad in Q4 (for the years 2014-2022) (2015-2023); 5) Border Guard Statistics for 2003-2023 (2003-2023).

of Poland’s inclusion in the EU quantitative quota system, establishing limits on imports of metallurgical production from Ukraine.

Since 2008, access to the Ukrainian market has been significantly liberalised as a result of Ukraine’s implementation of its WTO commitments. Temporary restrictions on pork imports from Poland and high import duties on selected agri-food products became a major obstacle at that time. Significant non-tariff restrictions also covered products, mainly from the metallurgical industry. Polish imports from Ukraine benefited to a large extent from EU customs preferences. The importance of Polish-Ukrainian trade in services has also changed. Polish exports of services to Ukraine increased (by almost 17% by 2014) (Tab. 1), mainly related to travel, intellectual property royalties (patents and licences) and commercial intermediation. In contrast, imports of services from Ukraine relating primarily to rail transport, government services, postal services, courier services and refining services decreased (almost 50%) (Błaszczuk-Zawiła, 2015; Sulym, 2020).

Table 1

Poland-Ukraine trade in goods and services (in PLN billion) 2004-2022

Type of trading	2004	2005	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Value of goods exports	7.4	8.4	15.0	10.6	11.9	13.8	17.1	18.0	13.1	12.4	15.0	18.1	18.9	21.3	23.3	28.6	45.8
Value of services provided	bd	bd	bd	bd	4.1	4.2	4.9	5.6	5.7	7.1	9.4	12.7	13.4	14.6	11.3	12.9	29.5
Value of imports of goods by country of origin	8.6	3.2	5.4	3.5	5.5	8.2	8.3	6.9	7.0	6.3	7.9	9.1	10.8	11.7	11.4	19.4	28.0
Value of imports of goods by country of dispatch	bd	4.6	5.4	3.5	5.4	8.3	8.4	7.0	7.0	6.6	8.6	9.5	10.9	12.1	11.7	19.1	28.6
Value of services purchased	bd	bd	bd	bd	0.9	0.8	0.7	1.0	0.7	0.8	1.0	1.3	1.4	1.8	1.9	2.3	29.1

Source: based on scattered CSO and Border Guard data (2004-2022).

The conditions for cooperation in the area of investment were also worse. Obstacles existed especially on the Ukrainian side and were due to, inter alia, systemic barriers, legislation, corruption, the tax and customs control system, inefficiency of the judiciary, etc. Political instability and the economic situation in Ukraine played a major role in this. This is evidenced by the performance

of Polish exports – good in the years when there was no recession in Ukraine (2008, 2010-2013) and its collapse in the crisis years (2009, 2014). Since 2015, Polish-Ukrainian trade in goods has started to grow¹³. A jump in growth, especially of Polish exports, occurred in 2021 and 2022, despite the fact that the Ukrainian economy is in war mode and was exposed to losses caused by this (Stefaniak, 2023) (Tab. 1).

Until 2019, Polish exports to Ukraine grew at an annual average of around 17% and imports from Ukraine by almost 20%. In 2020, the pace of Polish exports slowed to 7% and imports to 3%. From 2021 onwards, an increase in merchandise trade is observed, also maintaining the dynamics in 2022 (Rocznik statystyczny handlu, 2007-2022). In 2022 Ukraine became the 9th export market for Poland (with a 2.8% share of total exports), moving up from 15th place in 2021. In turn, Poland for Ukraine – the 2nd largest supplier after China, with a share of 10% of total imports, moving up from 4th place and ahead of Germany and Russia. In 2022, the structure of Polish exports to Ukraine was dominated (by SITC section) by: machinery, equipment and transport equipment and mineral fuels; manufactured goods and industrial goods and chemicals; food and live animals. Imports were dominated by industrial goods, food and live animals; non-edible raw materials except fuels, oils and fats; miscellaneous industrial goods and mineral fuels¹⁴.

In 2023 (for 8 months), Ukraine ranked 8th among Polish export partners and became Poland's 21st import partner.

Currently, the structure of the main commodity groups indicates that Polish exports largely 'serve' Ukraine's war needs. Among the products with the highest share are: fuels and mineral oils (accounting for 20%), non-rail vehicles and their parts (10%), arms and ammunition (8%), electrical machinery and equipment and mechanical appliances (6% each). Among the commodities that support Ukraine's reconstruction are water and soft drinks (up 246% y-o-y), telephone apparatus (up 198%), glass (up 267%), tomatoes (up 409% y-o-y) and onions (up 1030%) (Stefaniak, 2023). The share of Ukraine in Polish imports of agri-food goods is also increasing (Petryshena, 2023).

¹³ The beginning of the 21st century saw a cooling of relations between Poland and Ukraine. However, the gradual increase in trade has necessitated sectoral regulations and the consolidation of the efforts of many ministries, local government units, institutions and economic entities on both sides of the border.

¹⁴ By CN code, mineral products, machinery and equipment, electrical and electrotechnical equipment, transport equipment and products of the chemical industry as well as arms and ammunition accounted for the largest share of Polish exports to Ukraine in 2022. On the other hand, imports were dominated by: base metals and products of plant origin as well as fats and oils.

Local Border Traffic – a Tool for Economic Cooperation between Poland and Ukraine

Poland’s state border with Ukraine has a total length of 535 km² (15.2% of the total length of the Polish border) and is also an external EU border. There are 9 border crossings with passenger traffic, including 3 railway crossings (in Dorohusk, Zosin, Hrebenne, Korczowa, Medyka, Krościenko and Przemyśl). The majority (more than 97%) of Polish-Ukrainian border crossings take place through road crossings. In the case of Poland and Ukraine, they are a valuable resource for the bordering areas and the local community (Matejko, 2008; Sohn, 2014).

In the first six months of the LBT Agreement, 345,000 crossings were recorded on the Polish-Ukrainian border (with 6,487,771 – the total number of all crossings of the Polish-Ukrainian border by foreigners¹⁵; and approximately 7,500 LBT permits were issued at Polish consular units in Ukraine at that time) (Fig. 1).

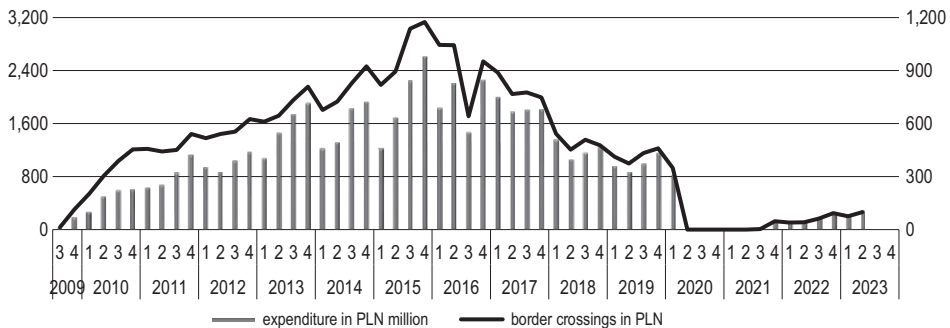


Fig. 1. LBT on the Polish-Ukrainian border in quarters from 2009 to 2023
 Source: based on scattered data from CSO and Border Guard (2009-2023).

The intensity of passenger traffic under the LBT regime has taken on a clear upward trend since 2009 (accounting for 40% of all crossings under the LBT regime), most notably at the border crossing point in Medyka. Among foreigners crossing the Polish-Ukrainian border, Ukrainians were the most numerous group (93%): motorised – about 90% (and under the LBT – 93%), pedestrians – 8% (respectively under the LBT – 10%) and rail travellers – about 4% (under the LBT – about 1%). Their estimated expenditure (mainly on non-food goods) accounted for more than 10% of expenditure on the Polish-Ukrainian border. However, in 2009, the total number of crossings at this border decreased by approximately 30%, which was due to the introduction of legislation amending

¹⁵ Border traffic data refers to the number of checks carried out by the Border Guard and reports on the number of border crossings, not the number of people crossing the border.

quantitative standards for the import of excise goods from 1.12.2008. In addition, Ukrainian border services began to enforce regulations on the length of stay of Polish citizens on the territory of Ukraine (concerning self-employment or hired work). Furthermore, in March 2008, the Act on the Card of the Pole came into force allowing multiple crossings of the Polish border¹⁶.

An analysis of expenditures by distance from the border shows that most were made in the zone up to 50 km from the border (expenditures by Ukrainians amounted to almost 70% of total expenditures and by Poles to about 86%). As highlighted above, LBT has been characterised by high dynamics every year since the agreement entered into force. The record year was 2015. At that time, the Polish-Ukrainian border was crossed almost 11 million times, accounting for 56% of all crossings of the Polish-Ukrainian border. By that time – since the beginning of the agreement – LBT cards alone had been issued more than 220,000¹⁷. Under the LBT regime, most Ukrainians (75%) crossed the border several times a week. Their average expenditure was about 540 PLN and was spent on non-food goods (86%).

It appears that the introduction of legislation facilitating the crossing of the Polish-Ukrainian border has significantly boosted traffic in the border strip. However, the abolition of the visa requirement in 2017 for Ukrainian citizens travelling to EU countries contributed to a decline in the number of LBT travellers.

Significantly, the volume of LBT was affected by its temporary suspension/restriction due to the SARS-CoV-2 coronavirus (from 15 March 2020). Only 0.9 million border crossings were recorded in 2020, some 80% less than in 2019. A similar decrease was recorded in 2021 (by 86%), which accounted for 0.1 million crossings of the Polish-Ukrainian border under the LBT regime. In September 2021 Ukrainian citizens were again allowed to cross the Polish border. There was an increase of 372% (0.6 million crossings) under the LBT (in 2022). The estimated value of expenditures incurred by Ukrainians under the LBT was PLN 240.0 million, 4.7 times more than in the previous year, and the average expenditure was PLN 785. In contrast, a Pole returning across the Polish-Ukrainian border in 2022 spent PLN 220. The majority of LBT border crossers crossed the border several times a month or several times a week (about 80% in total), mainly for shopping, as in previous years, for non-food goods (accounting for 85% of the total expenditure of Ukrainians in Poland and 50% of the total expenditure incurred in Ukraine). Less money was spent on services (analogously: 2% and 22%). The majority of purchases were made within 50 km (or even up to 30 km) of the border.

¹⁶ In 2009 4% of crossings of the Polish-Ukrainian border were made by Ukrainians with a Pole Card.

¹⁷ Only Ukrainian citizens apply for the card. Poles prefer to cross the border on the basis of a passport – due to the lack of a visa requirement (*Wielki mały ruch...*, 2016).

Polish-Ukrainian and Ukrainian-Polish purchases are part of the whole system of border trade – within regulatory limits – without the need for customs clearance, for own consumption purposes and for so-called small trade, including activity in the informal economy (Peciakowski & Gizicki, 2021).

Summary and Conclusions

Economic cooperation between Poland and Ukraine has developed with varying intensity over the years. The legal basis developed and the reforms carried out in Ukraine created good conditions for this. This has allowed Ukraine to strengthen its position in international rankings and improve the investment climate. Hence, year after year, Polish-Ukrainian trade turnover increased, the number of border crossings and investment engagement of Polish entrepreneurs in Ukraine increased (even during the COVID-19 pandemic). Poland has become a partner – a leader among European countries. Despite the armed conflict in Ukraine and the uncertain geopolitical situation, the Ukrainian direction remains important for Poland. However, in the authors' opinion, the potential of bilateral economic relations has not been fully exploited so far. This has been influenced by a number of factors, including mutual history, political and ideological affiliation, but also difficulties in doing business in Ukraine for Polish entrepreneurs and investors. In addition, corruption in Ukraine, the lack of economic security and the already mentioned armed conflicts have affected Polish-Ukrainian economic relations.

A redefinition of the goals and interests of both countries may serve to give momentum to bilateral relations and expand economic cooperation, including trade, in a recovering Ukraine. Poland can create the conditions for the development of Polish-Ukrainian cooperation in the post-war reality and provide further support for Ukraine in the international arena. In turn, the task for Ukraine is to modernise and develop its economy in order to strengthen itself as an equal partner. It is important here that the declared common desire to intensify economic partnership relations is transformed into concrete action. This can be assisted by strengthening Ukraine's political-economic contacts with the EU and its accession to the WTO. In this context, the authors propose to identify promising directions for Polish-Ukrainian economic cooperation.

Opportunities include the energy sector and renewable energy, construction (and the reconstruction of Ukraine's post-war infrastructure), the agri-food industry and mechanical engineering, as well as the medical and IT sectors.

Therefore, it becomes important to continue research on the further development of Polish-Ukrainian economic cooperation in order to diagnose existing restrictions and barriers on an ongoing basis. This will allow the development of favourable conditions for trade exchange (in the current uncertain geopolitical situation) to enable Polish entrepreneurs to enter the Ukrainian market.

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EFFECTS OF MARKETING COMMUNICATION OF A SMALL SERVICE COMPANY ON INSTAGRAM

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Key words: marketing communication, social media, Instagram, effects.

Abstract

A social media platform such as Instagram plays an important role in online marketing, enabling businesses to reach a wide audience. Academics and practitioners have long acknowledged the importance of proper marketing communication in creating long-term bonds between existing and new customers. However, the importance of promotional techniques used in the beauty industry on the Instagram platform as a tool to increase customer engagement remains under-explored, as addressed in this study. The aim of the research was to identify the promotional techniques that most increased customer engagement rates on the social media platform Instagram. The research used a case study method for a small service company operating in the beauty industry. In the analytical process, the data source was statistics describing the effects of the beauty salon's marketing activities on the social media platform Instagram. The results of the study showed that the key element of marketing communication is sharing posts presenting the result of the work, i.e. the results of beauty treatments presented in the photos of clients, and organising competition posts that engage both existing observers and arouse the interest of new users. Sponsored posts, on the other hand, are particularly important for reaching new potential customers.

EFEKTY KOMUNIKACJI MARKETINGOWEJ MAŁEJ FIRMY USŁUGOWEJ NA INSTAGRAMIE

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Słowa kluczowe: komunikacja marketingowa, media społecznościowe, Instagram, efekty.

Abstrakt

Platforma społecznościowa, jaką jest Instagram, odgrywa istotną rolę w marketingu internetowym, umożliwiając przedsiębiorstwom dotarcie do szerokiego grona odbiorców. Naukowcy i praktycy od dawna podkreślają znaczenie właściwej komunikacji marketingowej w tworzeniu długoterminowych więzi między obecnymi i nowymi klientami. Znaczenie technik promocyjnych wykorzystywanych w branży beauty na platformie Instagram jako narzędzia zwiększającego zaangażowanie klientów pozostaje jednak niedostatecznie zbadane, na co zwrócono uwagę w artykule. Celem zaprezentowanych badań było zidentyfikowanie technik promocyjnych, które w największym stopniu zwiększyły wskaźniki zaangażowania klientów na platformie społecznościowej Instagram. W badaniach zastosowano metodę studium przypadku małej firmy usługowej funkcjonującej w branży beauty. W procesie analitycznym źródłem danych były statystyki opisujące efekty działań marketingowych salonu kosmetycznego na platformie społecznościowej Instagram. Wyniki badania wykazały, że kluczowym elementem komunikacji marketingowej jest udostępnianie postów prezentujących wynik pracy, czyli rezultaty zabiegów kosmetycznych prezentowane na zdjęciach klientek, oraz organizowanie postów konkursowych, które zarówno angażują obecnych obserwujących, jak i wzbudzają zainteresowanie nowych użytkowników. Posty sponsorowane natomiast mają duże znaczenie, szczególnie w przypadku docierania do nowych klientów.

Introduction

Contemporary marketing trends are undergoing a dynamic evolution, and the development of social media plays a key role in this process. Prominent among these platforms is Instagram, which has become not only a popular social media tool, but also a powerful marketing instrument (Vinaika & Manik, 2017, p. 12-16).

The modern consumer has largely become an e-consumer, using widely available online tools to perform a variety of activities related to the purchasing process. In virtual spaces, the e-consumer searches for information about products and services, reads the opinions of other users, compares the offers of different suppliers, and ultimately makes a purchasing decision (Kopera, 2022, p. 7).

The implementation of promotional activities in social media is becoming essential for modern businesses. One of the commonly used tools in this field is the company fanpage. It is a strategic step that enables companies to establish a direct dialogue with their customers. The company fanpage, as a virtual communication centre, enables a company to present its identity, values and

offerings. The key benefits of maintaining such a space are building engagement, gaining customer loyalty and responding quickly to their feedback and needs (Werenowska, 2019, p. 99).

The Polish market for cosmetic services is characterised by high dispersion and enormous competition. It is dominated by micro and small private enterprises (Kryczka, 2021, p. 226). In order to function effectively and efficiently in such a highly competitive market, it is very important to adequately promote the beauty salon. One may think that social media are a good tool for this, as they allow the creation of an uninterrupted stream of marketing messages and at the same time act as an effective distribution channel. With the help of social media, a beauty salon can present (Pastuszek, 2021, p. 467-472):

- impressive portfolio (demonstration of the effects of treatments);
- staff profile;
- behind the scenes of the salon's work;
- clear presentation of the offer;
- price list;
- recording of testimonials;
- information on promotions.

The cosmetic services market is one of the dynamically developing markets in Poland. This development is fostered by global trends concerning the increased awareness of a pro-healthy lifestyle and beauty care (Kryczka, 2021, p. 225-233). The increasing affluence of Poles is also a favourable trend. At the same time, the small number of scientific publications on the cosmetic services market in Poland and the lack of publications dedicated to the effects of marketing communication of beauty salons on Instagram prompted the author to take up this topic. There is a need for a better understanding of effective ways to use social media to increase the visibility of the offer, engage customers and potentially generate sales growth.

Literature Review

Marketing communication

Marketing communication is an important component of social communication. For a long time, it was mainly identified with promotion as one element of the marketing-mix. Nowadays, it should be seen as a dialogue that a company has with the actors in its environment. It is a process that involves both parties, enabling companies to better understand their customers' needs and expectations, and to build lasting relationships based on trust and mutual understanding. Thus, in the context of contemporary marketing, communication becomes not only a promotional tool, but also a key element of brand building and customer loyalty (Taranko, 2018, p. 17-19; Mruk, 2004, p. 17, 18).

Within marketing communication management, formal elements such as advertising, promotion or public relations can be distinguished. These are important in communicating key information about products or services. However, informal elements such as customer feedback, recommendations or customer service experiences are equally important and also influence brand perception.

A key objective of marketing communications is not only to attract the attention of customers, but also to build long-term relationships based on trust and mutual understanding. Therefore, it is essential that organisations take steps to engage with customers in an authentic and valuable way (Rosa *et al.*, 2016, p. 217-220; Anagnostopoulos *et al.*, 2018, p. 413-438).

Social media and its functions

Social media (SM) represents one of the most important innovations in 21st century communication (Kaznowski, 2008, p. 29). Social media refers to a set of practices, activities and behaviours of groups of people gathering online to share information, knowledge and opinions through conversational media. This definition refers to online applications that facilitate the easy creation and transformation of content into different forms, such as words, images or audio material. The result is the notion of 'interactive media', allowing users to co-create content by commenting on publications or supplementing information (Kachniewska, 2013, p. 106-120).

Social media is an excellent tool to promote brands and a communication platform to provide consumers with rich information about services, products and brands. The internet creates a space for building relationships at different levels, whether between an organisation and a customer, between different organisations or between customers themselves. Users can find advice on specific products, information on methods of use and expert articles describing technical aspects of equipment on websites. Social media allows companies to communicate with their customers in real time and to create interactive relationships (Matwiejczyk, 2020, p. 171).

The effectiveness of social media marketing lies in its ability to precisely target advertisements. By analysing user data, marketers can tailor content to specific target groups, which increases the effectiveness of the advertising message. In addition, the ability to monitor data analysis allows for continuous improvement of the marketing strategy. It is also worth noting that the rapid growth of social media has made it the place where conversations about brands and products take place. An important element of effective marketing in this environment is actively participating in the dialogue with users and creating a positive brand image (Dziwulski & Tkaczuk, 2021, p. 65-67; Mirchandani & Gaur, 2019, p. 123-130).

Characteristics of the Instagram platform

Instagram is a social media platform mainly dedicated to sharing photographs and short video clips. Its aesthetics and interface focus on visual elements. From an initial focus on photography, this social media platform has gradually expanded its capabilities, becoming a place not only to share photos, but also to create and share a variety of video content and short life stories, which has helped to increase its popularity and diversify the options offered to users (Chobot, 2019, p. 49, 50).

More than 90 per cent of Instagram users follow accounts of different types of companies. This demonstrates the site's growing role as a marketing platform. Instagram enables companies to showcase products and create a compelling narrative around the brand. Thanks to the visual nature of the platform, businesses can focus on aesthetics and creating a consistent image online. Interactive features such as surveys, questions or the ability to purchase directly from a post further enhance user engagement (Lojza & Wolniak, 2021, p. 37-59). Many companies choose to conduct their marketing activities on this platform. This service offers a range of opportunities to reach current and potential customers, which makes it an attractive tool in the marketing strategy of companies. Creating a company profile on Instagram enables companies not only to post photos of the products or services they offer, but also to establish a wider connection with consumers. The platform provides a simple and aesthetically pleasing way of presenting visual content, which is particularly beneficial for companies whose offers rely on the visual aspect (Górecka, 2019, p. 10).

Today, Instagram is one of the fastest-growing social networks. At the beginning of 2024, the number of its users exceeded 2.4 billion people. Instagram has 500 million active users on a daily basis. It is also the seventh most-viewed website in the world (*Instagram Statistics...*, 2024).

The market for cosmetic services

The beauty industry is one of the most dynamically developing market branches in the Polish economy (Kisiel & Wiśniewska, 2016, p. 227). The Polish cosmetics market is ranked 6th in Europe in terms of revenue generated from the sale of cosmetics. The cosmetic market is divided into two, smaller markets: the cosmetic goods market and the cosmetic services market (Piotrowska & Szczechowicz, 2021, p. 47, 48). Cosmetic services are provided by beauty and cosmetology salons (surgeries), spa and wellness centres, as well as aesthetic medicine surgeries (*Report on the State of the Cosmetic Industry...*, 2017, p. 16). The cosmetic goods market in Poland reached revenues of more than EUR 4.0 billion in 2019 and revenues in 2023 should reach EUR 6.5 billion (*The Cosmetics Sector – report PAIH*, 2023).

Beauty salons are based on the provision of basic services, but the number of specialised salons has been increasing in recent years. Prices in the market for cosmetic services vary greatly due to the type of treatment and the location in which the salon operates (Kryczka, 2021, p. 227).

The development of the market for cosmetic services is accompanied by a rapid expansion of vocational education in cosmetology. This is particularly true of academic education. As a result, the total number of beauty parlours and hairdressing salons in Poland is estimated at around 100,000 (Kryczka, 2021, p. 225). The barriers to entry into this market are relatively low, which means that many entrepreneurs are able to start their own salon with relatively modest financial resources (Pastuszek, 2021, p. 465).

The rapid development of this market is favoured by worldwide trends concerning a pro-healthy lifestyle and a 'cult of beauty'. Also of great importance is the increasing affluence of Polish consumers and the changes taking place in the ways they spend their leisure time, among which leisure activities have a significant place, positively stimulating expenditure on cosmetic services (Alejziak *et al.*, 2021, p. 16).

Methodological Assumptions

The research used a case study method, where the research subject was a small service business – a beauty salon. The subject focuses on providing high-quality eyebrow and eyelash lamination services and comprehensive eye care. The salon actively and systematically publishes its achievements, advice and recommendations to its clients.

The analytical process observed the marketing activities carried out by the salon in the fourth quarter of 2023. The data source was the statistics available in the professional profile of the account, describing the effects of the salon's marketing activities on Instagram. The measures of the effectiveness of the marketing communication activities were the number of impressions, reactions (likes), comments and shares of the post. Direct access to these statistics made it possible to objectively assess the reach and engagement of users with the content presented.

Reach among observers refers to the number of people who are direct subscribers to the salon's profile and who had access to the post in their content stream. Reach among non-watchers, on the other hand, refers to the number of non-subscribers who also had the opportunity to see the post, perhaps through the interaction activity of their friends or through the social platform's algorithms.

The number of impressions includes the total number of views of a post, whether or not the user has interacted further with the content. The number of engaged accounts reflects the number of unique user profiles that have taken any action related to the post, such as likes or comments. Likes and comments

represent indicators of user engagement with content published by the salon. Likes represent the number of positive interactions a post has received, while comments are an indication of active engagement.

Research Findings – Effects of Activities on Instagram

Table 1 summarises the statistics for the various posts. In the first stage, two posts were analysed in the form of a photo showing the effects of the client’s eyebrow and eyelash styling. The first post showed the client’s full face after the treatment. It had a reach of 693 people. The split between followers and non-watchers is key, as it allows us to understand that a post has the potential to reach both an established community and a new potential audience outside of the current follower group. The number of people watching the salon’s account who saw the post was 275. In contrast, 418 people, were not connected in any way to the salon’s profile. This demonstrates the high potential for the photo posted to attract attention. This post was viewed a total of 1,118 times.

Table 1
Statistics of analysed posts

Techniques	Coverage		Displays	Commitment	
	Watching	Non-observant		Likes	Comments
Full face picture	275	418	1,118	67	5
Photo focused on the effect of the work	290	338	706	41	0
Promoted photo	489	4,175	-	121	24
Competition photo	356	308	846	72	51
Report	214	138	482	-	-
Roller	5,119			42	2

Source: own elaboration.

The relatively high number of likes of a post at 67 is indicative of the general acceptance of the content presented in the post. This is an important indicator of positive community response, suggesting the attractiveness and value of the content being communicated. Although the number of comments at 5 may seem small, it illustrates the activity of the community in interacting with the post.

The second post in the form of a photo focused solely on the customer’s eyes gained a reach of 638 accounts, which is similar to the previous photo type. Of the 638 accounts, 290 were people previously observing the researched profile. In contrast, 338 were people previously not observing the salon’s account. The total number of views of the post showing the effect of the treatment in this

way was 706. This shows that the post attracted a fairly high level of interest from users, although not as much as in the case of a post with the client's full face. The number of 41 likes under the post is an indication of the average level of interest in the content presented. Compared to the previous post, a noticeably lower number of likes and no comments were obtained here.

In the process of analysis, an evaluation of another technique was undertaken, namely a promoted post that featured the profile founder. This publication aimed to promote the account and initiate a relationship with users through a form of personalisation of the institution, which is a beauty salon.

A promotional campaign was run for a period of six days to reach the target audience and increase the visibility of the account. The advertising budget was set at £8 per day for the entire campaign period, which totalled £48. This moderate amount made it possible to exploit the potential of the platform, achieving the result shown. The reach of the post reached the number of 4664. The significant number of ad impressions among people who do not observe the salon's profile (4,177) proves the effectiveness of the campaign in attracting the attention of Instagram users. The cost of reaching one person with the message was approximately one penny (PLN 48 per 4,664 viewers). The high number of impressions among observers (489) also signals that the content was also attractive to them. The number of 121 likes indicates the acceptance of the post by users. In addition, 24 comments express a desire to interact with the profile.

A competition post was also used in the communication strategy. The competition photo reached 664 users. This included 356 people who already follow the salon's profile and 308 non-watchers. The terms of the competition included three main steps:

- designation of two people in the comments section;
- to observe the profile and to like the competition photo;
- sharing the competition photo on your story.

The prize of the competition was a substantial discount on the salon's services. This created an environment conducive to increasing community engagement and reaching new potential followers. The total number of impressions of the post was 846, proving that the post gained a lot of interest and reached a wide group of Instagram users. This type of post can effectively influence community interaction. The number of likes of 72 shows that many people showed interest in the competition and the beauty salon's services. The number of comments of 51 confirms users' engagement and their willingness to take part in the competition according to the announced terms and conditions.

A video reel showing the effects of the eyebrow and eyelash lamination treatment on the client's face was also assessed. The reach of the rollout was 5,119 accounts, which proved to be a significant result. The attractiveness of the content presented in the roll attracted the attention of a large number of people. When analysing the results of the interaction with the roll, it was noted that it received 42 likes and 2 comments. The number of likes of 42 with

a large number of impressions was relatively low. Although the content attracted attention, not every viewer chose to interact by liking it.

In the final stage, an evaluation of the coverage posted on Instastories was undertaken. The reach of the relationship reached 352 accounts, of which 214 were people who already follow the salon's profile and 138 were users who do not yet follow the profile. This result suggests that the coverage attracted both regular followers and new audiences from outside the current community. The total number of one-off impressions of the relationship was 482, which is a significant number, but this did not necessarily translate into active engagement with the profile.

Of the posts examined, the photo showing the client's full face achieved relatively high reach among observers (275) and among non-observers (418). In contrast, the promoted photo achieved the highest reach among non-observers (4,175), suggesting the effectiveness of the promoted paid posts in reaching a wider audience beyond those observing the salon's profile. In terms of total number of impressions, the photo showing the client's face achieved the highest number (1,118). Analysis of user interactions revealed that the competition photo generated the highest number of comments (51), suggesting that competitions can effectively encourage users to engage with the service provider.

Summary and Conclusions

The aim of the research presented in the article was to identify best practice from the wide range of marketing activity opportunities available on Instagram from the perspective of increasing the number of followers and their engagement rate. The monitoring of audience reactions to content included the number of likes and comments issued. The research process was conducted using the example of a small service business such as a beauty salon. The paper concludes by outlining key implications that arise from this research.

The key to successful promotion on Instagram is to use a variety of techniques. Holding competitions and investing in promoting posts are particularly effective strategies, generating high engagement and increasing the visibility of the promoted profile. Video content, such as reels, can attract attention, but it is important to ensure they are of high quality and creative to effectively encourage interaction. Showing the results of your work and creating relationships can build trust and authenticity in your profile, which is key to attracting potential customers. Regularly publishing high-quality content that is attractive, engaging and of value to the community helps to maintain consumer interest. Organising competitions and promotional activities encourages existing observers to share the company's profile and attracts new users.

Key practical implications arise from this research. The analysis of the data collected shows that, in the context of customer acquisition and increasing the popularity of an account on the Instagram platform, sharing competition posts is an effective strategy. These showed a relatively high reach among observers and non-observers and generated user engagement in the form of the number of likes and comments. It was also important to regularly publish posts showing the results of treatments given to clients. It can therefore be concluded that this type of content can particularly attract the attention of the audience. Sponsored posts can also be an effective tool in raising awareness of a company's existence and promoting the services it offers to new potential customers. With paid content promotion, a greater reach can be achieved and potential customers outside the existing circle of observers can be better reached. The results of the study therefore lead to the conclusion that, in order to effectively increase the popularity of an account and attract new customers on the social media platform Instagram, it is worth employing a strategy based on regularly sharing posts showing the results of treatments performed on clients, occasionally sharing competition posts and occasionally publishing sponsored posts.

This study has some limitations, while also providing a starting point for further research. The conclusions are based on only one research subject, so it would be advisable to conduct research on a larger research sample. It would be advisable to broaden the scope of future research to include other industries and social media. Comparative studies from different countries would also be of cognitive interest.

Translated by Author

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GDP IMPACT ON THE DIGITAL ECONOMY IN EUROPEAN UNION COUNTRIES

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Abstract

This article explores issues relating to the development of the digital economy in the countries of the European Union. Its aim is to assess the impact of a country's GDP on its DESI index. In this study, the research problem involves finding answers to the following questions: 1) Why does the development of the digital economy in different EU countries show such a substantial variation? 2) Which DESI index indicators have the greatest impact on its final score? 3) Does the overall development of the domestic economy have an impact on the development of its information society? The research conducted with these goals in mind warrants the conclusion that the pace of development of the digital economy in the less developed EU countries is higher than in the leader countries. Furthermore, it has been found that the indicators within the "4 Digital public services" and "1 Human capital" dimensions have the greatest impact on the DESI index. The direct influence of GDP per capita on the DESI index has been demonstrated experimentally. In contrast, the assumption that the growth rate of GDP and the share of the ICT sector in GDP correlates with the development of the digital economy and information society has not been confirmed.

WPLYW PKB NA GOSPODARKE CYFROWA W KRAJACH UNII EUROPEJSKIEJ

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Abstrakt

W artykule postawiono pytania dotyczące rozwoju gospodarki cyfrowej krajów Unii Europejskiej. Celem artykułu jest identyfikacja wpływu PKB kraju na jego indeks DESI. Problemem badawczym opracowania jest znalezienie odpowiedzi na pytania: dlaczego istnieje tak duże zróżnicowanie w rozwoju gospodarki cyfrowej w różnych krajach Unii Europejskiej?; jakie wskaźniki indeksu DESI mają największy wpływ na jego końcową wartość?; czy ogólny rozwój gospodarki kraju ma wpływ na rozwój jego społeczeństwa informacyjnego? Wyniki przeprowadzonych badań pozwalają stwierdzić, że tempo rozwoju gospodarki cyfrowej w krajach UE mniej rozwiniętych jest większe od krajów-liderów. Ponadto ustalono, że największy wpływ na indeks DESI mają wskaźniki wymiarów „4 Digital public services” i „1 Human capital”. Eksperymentalnie potwierdzono bezpośredni wpływ PKB na mieszkańca na indeks DESI. Założenia natomiast o istnieniu związku między tempem wzrostu PKB i udziałem sektora ICT w PKB a rozwojem gospodarki cyfrowej i społeczeństwa informacyjnego nie potwierdzono.

Introduction

Since 2014, the assessment of the digital economy and development of the information society in EU countries has relied on the Digital Economy and Society Index (DESI). Originating with the European Commission, the index was introduced as a tool to monitor the progress of digitalization in various sectors of the national economy of the EU Member States. “At present, DESI serves to monitor 32 digital maturity indicators, spanning four areas: Digital Competence, Digital Infrastructure, Digital Transformation of Businesses, Digitalization of Public Services” (*Wskaźnik DESI jako miernik..., 2023*). All these areas are taken into account while compiling detailed annual reports which describe the progress of digital transformation in EU countries. Chronological data from the reports suggests the need for accelerated change, while the Member States should become more involved in the digitalization of their digital economy. The DESI index shows significant variation in the development of information societies in the countries of the European Union. Finland, Denmark, Sweden, and the Netherlands invariably lead the 27 states, whereas those falling behind include Romania, Greece, Bulgaria and Poland (Fig. 1).

In order to reduce the existing gap between the digitally developed countries and the underperformers, including Poland, it is necessary to “[...] carry out reforms, improve the business environment, encourage investment in digital technologies, promote skills and modernize the infrastructure. The aforementioned actions should be implemented in line with the provisions of the jointly adopted European Declaration on Digital Rights and Principles for the Digital Decade” (*Wskaźnik DESI jako miernik..., 2023*).

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

– why does the development of the digital economy in different EU countries show such a substantial variation?

– which DESI index indicators have the greatest impact on the final score?
 – does the overall development of the domestic economy have an impact on the development of its information society?

Finding answers to the above questions will make it possible to understand the causes behind the existing discrepancies in the development of the digital economy and advance measures to improve the position of underperforming countries, including Poland. The answers will also help to achieve the objectives set by

countries	2017	2018	2019	2020	2021	2022
Austria	12	12	11	13	10	10
Belgium	13	13	15	11	14	17
Bulgaria	↓ 26	↓ 26	↓ 26	↓ 26	↓ 26	↓ 27
Croatia	20	20	20	20	20	21
Cyprus	22	23	23	24	22	21
Czechia	19	19	19	19	19	20
Denmark	↑ 2	↑ 3	↑ 2	↑ 2	↑ 2	↑ 2
Estonia	8	7	9	9	9	9
European Union	17	17	17	18	15	15
Finland	↑ 1	↑ 1	↑ 1	↑ 1	↑ 2	↑ 1
France	16	16	16	16	17	12
Germany	18	18	18	17	12	13
Greece	↓ 27	↓ 27	↓ 27	↓ 27	↓ 27	↓ 26
Hungary	23	24	24	23	24	23
Ireland	7	6	8	7	5	5
Italy	24	22	21	21	21	19
Latvia	10	11	12	12	16	18
Lithuania	11	10	10	10	13	14
Luxembourg	5	5	5	6	6	8
Malta	6	8	6	5	8	6
Netherlands	↑ 4	↑ 4	↑ 4	↑ 4	↑ 3	↑ 3
Poland	↓ 25	↓ 25	↓ 25	↓ 25	↓ 25	↓ 25
Portugal	15	15	14	14	18	16
Romania	↓ 28	↓ 28	↓ 28	↓ 28	↓ 28	↓ 28
Slovakia	21	21	22	22	23	24
Slovenia	14	14	13	15	11	11
Spain	9	9	7	8	7	7
Sweden	↑ 3	↑ 2	↑ 3	↑ 3	↑ 4	↑ 4

Fig. 1. Ranking of EU countries in the DESI index

Source: own elaboration based on *Digital Economy and Society Index...* (2022b).

the European Parliament with respect to the digital economy and information society in EU countries, published in the policy programme entitled *The Path to the Digital Decade*. According to the latter, the digital targets include, e.g. (Decyzja Parlamentu Europejskiego..., 2022, p. 15, 16):

„1) A digitally skilled population and highly skilled digital professionals, with the aim of achieving gender balance, where:

- at least 80% of those aged 16-74 have at least basic digital skills;
- at least 20 million ICT specialists are employed within the Union while promoting the access of women to this field and increasing the number of ICT graduates [...];

2) the digital transformation of businesses, where:

- at least 75% of Union enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence;
- more than 90% of Union SMEs reach at least a basic level of digital intensity [...];

3) the digitalisation of public services, where:

- there is 100% online accessible provision of key public services and, where relevant, it is possible for citizens and businesses in the Union to interact online with public administrations;
- 100% of Union citizens have access to their electronic health records;
- 100% of Union citizens have access to secure electronic identification (eID) means that are recognised throughout the Union, enabling them to have full control over identity transactions and shared personal data”.

Given the above, the enquiry undertaken here is highly relevant and may contribute to achieving the digital targets facing the Member States.

The impact of the DESI index on the economies of EU countries has often been addressed in scientific investigations. For instance, M. Olczyk and M. Kuc-Czarnecka have analysed the possibilities of improving the structure of the DESI index as well as its impact on the GDP of a country. The authors confirmed that the growth of the DESI index has a positive impact on GDP per capita. In their opinion, the growth of the digital economy will promote direct economic growth for the country as a whole (Olczyk & Kuc-Czarnecka, 2022). The effect of particular DESI index indicators on a country's GDP per capita has been examined in yet another publication, whose authors argue that such a relationship does exist and, moreover, proves particularly significant with respect to citizens' use of online services by citizens and digital technology integration by tech enterprises (Parra *et al.*, 2021). Based on those findings, it is presumed in this paper that an increase in GDP per capita may boost the development of the digital economy. Along with the impact of GDP, it would be worthwhile to analyse how its growth rate affects the characteristics of the development of the digital economy. Investigating such relationships might serve to justify the differentiation of the DESI index for various EU countries.

A study by Ł. Arendt focuses on the relationships between ICT and GDP growth in the countries of Central and Eastern Europe. The author also examines various indices which serve to measure the development of the digital economy and information society. The inquiry confirms the positive impact of ICT capital on the GDP growth of a country (Arendt, 2015). Furthermore, the existence of a link between a country's ICT sector and its economic growth is highlighted by a team of authors from Uzbekistan. Specifically, their study demonstrates that an increase in ICT sector indicators is associated with an increase in GDP dynamics (Ishnazarov *et al.*, 2021). A similar conclusion was reached by UAE authors in their study on the impact of investment in the ICT sector on economic growth (*Assessing the Impact of ICT...*, 2023). A potential link between the share of a country's ICT sector in its GDP may also be inferred from the fact that pertinent statistical data were collected between 2009 and 2020 by Eurostat (*Percentage of the ICT sector...*, 2023). The research conducted to date offers grounds for the assumption concerning the actual impact of ICT sector size in GDP on the DESI index.

A number of other publications in recent years have also been concerned with the impact of the DESI index on various aspects of the national economy. For example, O. Başol and E.C. Yalçın found that an increase in the DESI brought about a rise in the employment rate and personal earnings, both of which constitute positive labour market indicators; simultaneously, it reduced negative labour market indicators such as long-term unemployment rate and labour market insecurity. A higher level of digitalization in EU countries in 2018 contributed to an improvement in labour market indicators (Başol & Yalçın, 2021). The existence of a link between consumption, unemployment and the DESI index was asserted by yet another team of authors, who showed that a 1% increase in the consumption index sees a corresponding DESI increase of about 0.2, while when unemployment increases by 1%, DESI drops by approximately 0.2 (Stavytskyy *et al.*, 2021).

Thus, previous research confirms that the development of a digital economy and information society is indeed reflected in a country's overall economic development and GDP growth. Consequently, there are valid reasons to assume that the economic development of a country influences the development of its e-economy and information society.

Based on the analysis of previous scientific publications and their findings, the author of the current study considers it reasonable to formulate the following *objective* of the paper: to identify the impact of a country's Gross Domestic Product on its position in the DESI ranking. In order to accomplish that objective, it is necessary to verify three research hypotheses:

- H1. A country's GDP per capita has an impact on its DESI index ranking.
- H2. A country's real GDP growth rate affects its DESI index.
- H3. The share of the ICT sector in a country's GDP affects its DESI index.

Research Methodology

The research relies on statistical data from the Eurostat portal. The data were subjected to statistical analysis involving Pearson correlation. The research spans the period from 2017 to 2022, while its territorial scope is confined to the countries of the European Union.

In order to accomplish the objective of the study and verify the research hypotheses, the following steps were taken:

- analysis and characterization of the structure of the DESI index;
- determination of the weights of its individual indicators and identification of those which demonstrate the greatest impact;
- analysis of the growth dynamics of the DESI index for different countries;
- statistical analysis of the collected statistical data;
- verification of research hypotheses;
- formulating conclusions and suggestions.

Based on an analysis of scientific publications (Żurkowski, 2014; Siedlecka, 2001; Kukuła, 2003), the following *r*-Pearson correlation coefficient scale was adopted for the purposes of assessing the strength of correlative relationships in the study:

- $0 \leq r \leq 0.3$ – none or very weak;
- $0.3 < r \leq 0.5$ – moderate;
- $0.5 < r \leq 0.7$ – strong;
- $0.7 < r \leq 1$ – very strong.

In order to assess the statistical significance of the *r*-Pearson correlation coefficient, *p* was set at ≤ 0.05 . Statistical analyses were carried out using IBM SPSS Statistics software (v. 29.0.0.0), while source data modelling and visualizations were obtained by means of Visio Professional 2013 and Power BI Desktop from Microsoft (v. 2.124.1052.0, December 2023).

Results

The DESI index is currently used to assess the state of the digital economy and the development of information society in the countries of the European Union. As already noted, there are evident leaders and countries which clearly fail to keep up the pace. Finland, for instance, qualifies as the former, while Romania ranks lowest on the list. Although Poland does not perform very poorly, it has been in 25th place out of 28 countries for several years (Fig. 1). Figure 2 compares the DESI index for Finland, Poland and the European Union average. In 2017-2022, Finland's score increased 1.45 times (by 31.2%), European Union's 1.55 times (by 35.6%) and Poland's 1.63 times (by 38.7%). Such a rate of growth is indicative of positive dynamics among the less digitally developed countries

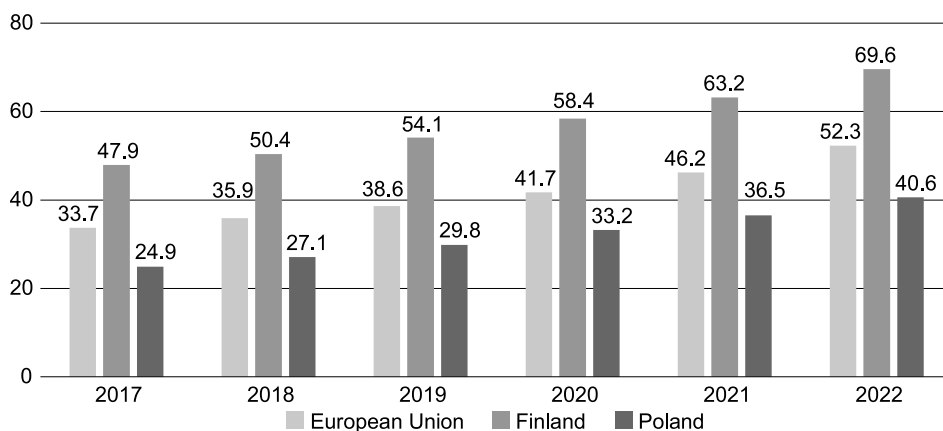


Fig. 2. Comparison of the DESI index for Finland, European Union and Poland
Source: own elaboration based on *Digital Economy and Society Index...* (2022b).

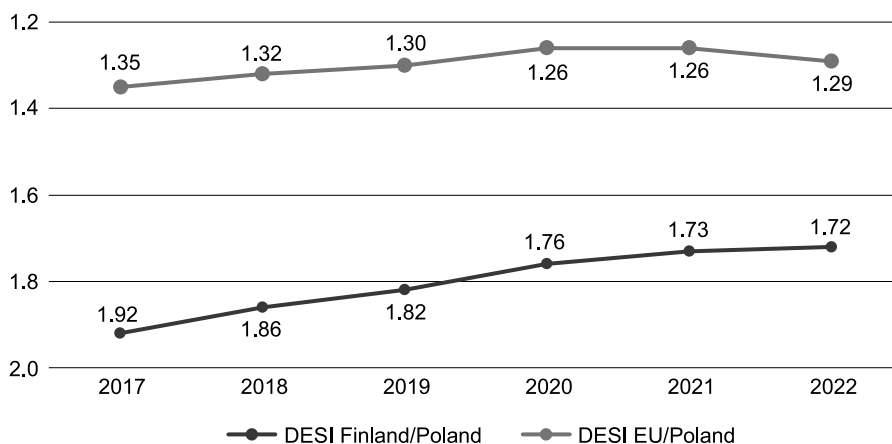


Fig. 3. DESI index quotient for Finland/Poland and EU/Poland
Source: own elaboration based on *Digital Economy and Society Index...* (2022b).

compared with the leaders. The same trend may be seen in the data presented in Figure 3, which shows a definite reduction in the gap between Poland and Finland.

Positive trends may also be observed in other EU countries, as the DESI index scores increased year-on-year for all Member States, with annual growth ranging from 3.88% to 17.29% (Fig. 4). The visualization in Figure 4 demonstrates highly dynamic growth of the digital economy index in the underperforming countries in comparison with the leaders shown in Figure 1. For example, in the analysed period (2017-2022), the annual growth of the DESI index for Finland and Sweden did not exceed 10%. The two other record-breakers – Denmark and

the Netherlands – exceeded 10% growth only in 2021/2020 but failed to reach that threshold in other years. In contrast, in the countries marked as underperformers in Figure 1, the growth in the final years exceeded 10% (e.g. Romania – 10.30% in 2022/2021; Greece – 15.16% in 2021/2020 and 16.49% in 2022/2021; Bulgaria – 13.35% in 2022/2021; Poland – 10.30% in 2020/2019) (Fig. 4). These figures clearly show an increase in the growth rate of the digital economy and information society in the countries which apparently fare less well.

countries	Index growth in %				
	2018/2017	2019/2018	2020/2019	2021/2020	2022/2021
Austria	5.36	6.77	5.48	13.68	7.61
Belgium	6.05	4.92	9.58	5.31	7.14
Bulgaria	7.25	8.09	5.94	8.67	13.35
Croatia	5.54	8.30	5.24	14.09	9.40
Cyprus	↓ 4.11	7.09	7.41	11.63	↑ 17.29
Czechia	6.90	8.02	5.99	8.79	11.76
Denmark	4.56	6.44	7.02	14.21	↓ 5.90
Estonia	6.00	5.58	5.06	7.70	5.96
European Union	6.15	7.04	7.27	9.81	11.63
Finland	4.98	6.96	7.33	7.50	9.25
France	5.84	8.94	7.22	7.38	13.89
Germany	5.24	7.98	8.84	10.60	11.01
Greece	4.93	7.87	7.43	↑ 15.16	16.49
Hungary	6.18	6.40	10.19	7.44	11.54
Ireland	6.26	5.57	8.11	11.03	8.94
Italy	7.88	↑ 10.98	6.51	10.09	17.06
Latvia	5.05	↓ 3.88	6.99	↓ 4.49	7.20
Lithuania	7.86	6.19	5.53	5.02	10.79
Luxembourg	4.36	4.00	6.78	6.96	6.49
Malta	4.90	7.59	7.90	5.38	10.56
Netherlands	5.16	4.83	7.61	12.33	7.44
Poland	↑ 8.11	8.90	↑ 10.30	9.12	9.91
Portugal	6.29	6.10	6.97	5.49	9.67
Romania	6.42	7.33	9.55	9.91	10.30
Slovakia	6.03	4.72	8.10	9.41	8.08
Slovenia	5.73	7.39	↓ 4.73	10.51	10.12
Spain	6.57	7.82	5.39	9.29	9.81
Sweden	6.22	6.18	6.80	7.84	7.25

Fig. 4. Comparison of DESI index growth in successive years
Source: own elaboration based on *Digital Economy and Society Index...* (2022b).

The structure of the DESI index in 2022 involved a division of the thirty-two indicators into four dimensions and ten sub-dimensions. The weight of each dimension is equal and accounts for 25%. The sub-dimensions, on the other hand, have a varied influence on their corresponding dimension. According to the authors of the DESI index, this impact ranges from 10% to 100% (Fig. 5). The impact of individual indicators and each sub-dimension was found equally important and, therefore, they were assigned equal weights within the respective sub-dimension (*Digital Economy and Society Index...*, 2022a, p. 12).

Following calculations, it was determined that the weight of the individual indicators ranges from 1.25% to 5.00%. Factors in the dimensions “4 Digital public services” and “1 Human capital” (sub-dimension “1a Internet user skills”) carry the highest weight (4.17-5.00%), whereas the lowest (1.25-2.08%) was allocated to the dimensions “3 Integration of digital technology” (sub-dimension “3c e-Commerce”) and “2 Connectivity” (sub-dimension “2a Fixed broadband take-up”) (Tab. 1). Analogous conclusions may be drawn from the visualizations in Figure 6, which demonstrate the contribution of individual dimensions to the structure of the DESI index for Finland, European Union and Poland.

Table 1

DESI index indicators by weight

Indicators	Weights [%]
4a1 e-Government users; 4a2 Pre-filled forms; 4a3 Digital public services for citizens; 4a4 Digital public services for businesses; 4a5 Open data	5.00
1a1 At least basic digital skills; 1a2 Above basic digital skills; 1a3 At least basic digital content creation skills	4.17
3a1 SMEs with at least a basic level of digital intensity	3.75
2c1 5G spectrum; 2c2 5G coverage; 2c3 Mobile broadband take-up	3.33
1b1 ICT specialists; 1b2 Female ICT specialists; 1b3 Enterprises providing ICT training; 1b4 ICT graduates	3.13
2b1 Fast broadband (NGA) coverage; 2b2 Fixed Very High Capacity Network (VHCN) coverage	3.13
2d1 Broadband price index	2.50
3b1 Electronic information sharing; 3b2 Social media; 3b3 Big data; 3b4 Cloud; 3b5 AI; 3b6 ICT for environmental sustainability; 3b7 e-Invoices	2.50
2a1 Overall fixed broadband take-up; 2a2 At least 100 Mbps fixed broadband take-up; 2a3 At least 1 Gbps take-up	2.08
3c1 SMEs selling online; 3c2 e-Commerce turnover; 3c3 Selling online cross-border	1.25

Source: own elaboration based on *Digital Economy and Society Index* (2022a, p. 4, 12).

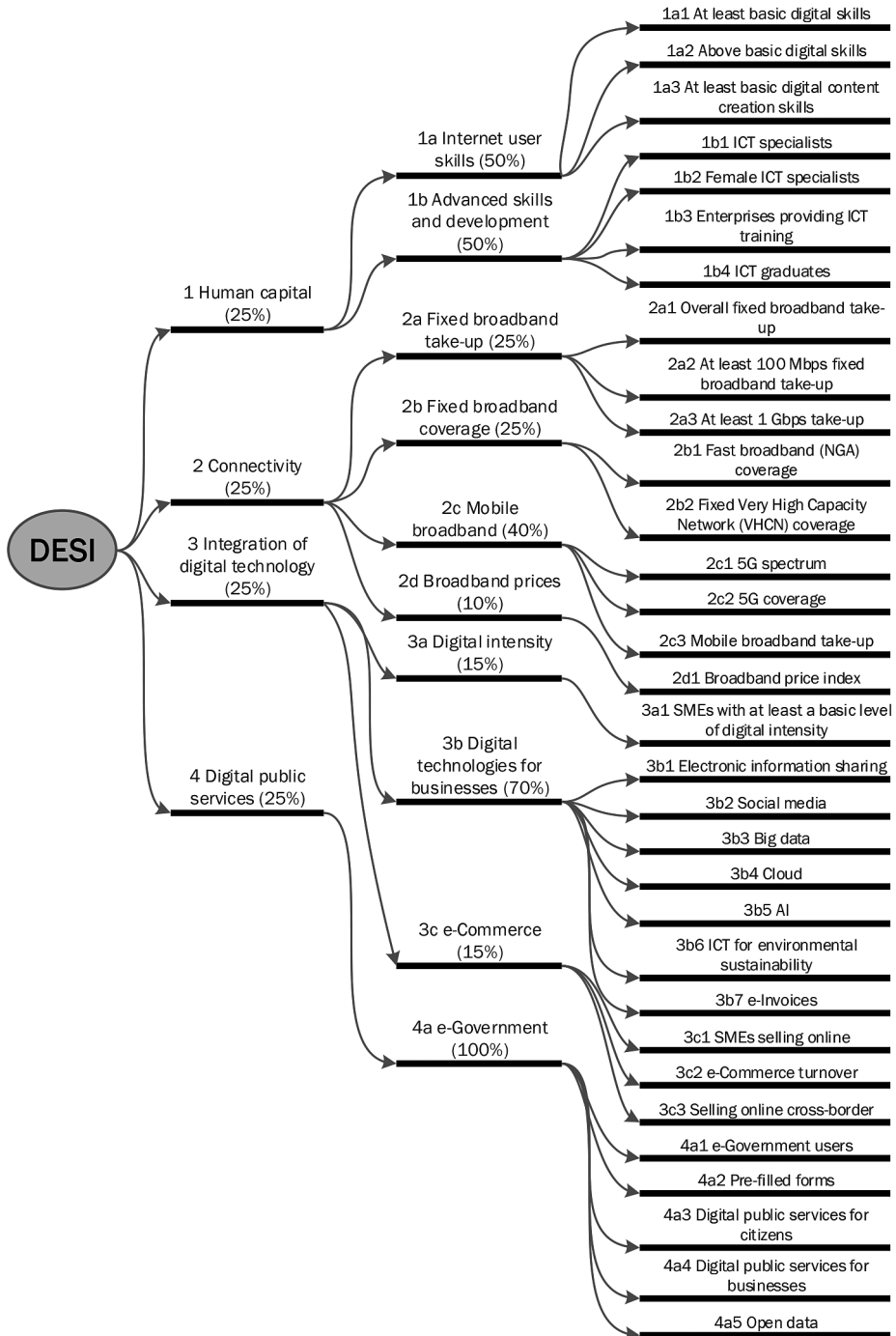


Fig. 5. Structure of the DESI index

Source: own elaboration based on *Digital Economy and Society Index* (2022a, p. 4, 12).

Based on the calculated weights in Table 1, it may be concluded that in order to increase the DESI index, particular attention should be paid to the highest-weight indicators in the dimensions “4 Digital public services” and “1 Human capital” (Fig. 6). Their increase will bear most substantially on the direct increase of the DESI index of all Member States.

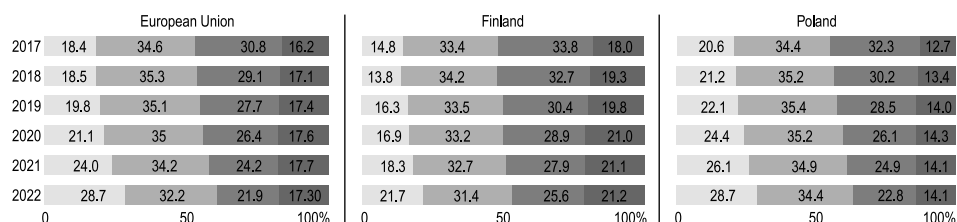


Fig. 6. Percentage structure of the DESI index for Finland, the European Union and Poland
Source: own elaboration based on *Digital Economy and Society Index...* (2022b).

The following criteria were selected for statistical analysis in this study:

- the DESI index (*Digital Economy and Society Index...*, 2022b);
- actual growth rate of a country’s GDP (*Real GDP growth...*, 2023);
- share of the ICT sector in a country’s GDP (*Percentage of the ICT sector...*, 2023);
- country’s GDP per capita (*GDP per capita...*, 2023).

Statistical analysis of the above criteria was carried out in the IBM SPSS Statistics programme. As a result of this analysis, a correlation table was prepared, including the values of the r -Pearson correlation coefficient and its statistical significance p (Tab. 2).

Table 2

Results of correlation analysis

Specification		2017	2018	2019	2020	2021	2022
Real GDP growth rate	r -Pearson correlation	-0.22	-0.407	-0.502	0.186	-0.161	-0.401
	statistical significance p	0.261	0.032	0.007	0.343	0.413	0.035
Share of the ICT sector in GDP	r -Pearson correlation	-0.273	-0.037	-0.183	-0.035	–	–
	statistical significance p	0.16	0.85	0.352	0.861	–	–
GDP per capita	r -Pearson correlation	0.582	0.574	0.553	0.565	0.564	0.539
	statistical significance p	0.001	0.001	0.002	0.002	0.002	0.003

Source: own elaboration.

In Table 2, cells with statistical significance $p > 0.05$ are highlighted in red. The calculations demonstrate that the relationship between the DESI index and the share of the ICT sector in GDP is not statistically significant, i.e. changes in that share do not contribute to changes in the index. The correlation of real GDP growth rate was statistically significant in only three years: 2018, 2019 and 2022. For these years, the correlation is moderate, with the coefficient $r < 0$. This means that the correlation is inverse: a higher growth rate may cause a decrease in the DESI index, and, conversely, a decrease in the GDP growth rate will positively affect the DESI. Because the correlation of this indicator is statistically significant only in three years and insignificant in the remainder, it is not possible to state conclusively that there is a relationship between the GDP growth rate and the DESI index.

The third analyzed criterion (GDP per capita) has a positive, statistically significant correlation with the DESI index ($p \leq 0.003$), whereby the relationship itself is strong (Tab. 2). It would follow that an increase in GDP per capita translates into higher DESI index and, conversely, a drop in GDP results in a decrease in the DESI.

Summary and Conclusions

The statistical tests carried out as part of this study enable verification of the adopted research hypotheses (Tab. 3). Hypothesis H1 was verified positively, and hypotheses H2 and H3 were verified negatively. Such outcomes confirm that GDP per capita has an impact on a country's DESI index. On the other hand, the assumption that there exists a relationship between GDP growth rate, the share of the ICT sector in GDP and the development of digital economy and information society was rejected.

Table 3

Verification of research hypotheses

Hypothesis	r -Pearson correlation coefficient and statistical significance		Verification	
H1. GDP per capita of a country has an impact on its DESI index score	$0.539 \leq r \leq 0.582$ $p \leq 0.003$		positive	
H2. Real GDP growth rate of a country has an impact on its DESI index	years: 2017, 2018, 2021	$p > 0.05$	partially negative	negative
	years: 2018, 2019, 2022	$-0.502 \leq r \leq -0.401$ $p \leq 0.035$	partially positive	
H3. Share of the ICT sector in the GDP of a country has an impact on its DESI index	$p > 0.05$		negative	

Source: own elaboration.

The research conducted as part of this study enables the following conclusions to be drawn:

1. The rate of development of the digital economy in the less developed EU countries is higher than in the leading countries.
2. The indicators within the dimensions “4 Digital public services” and “1 Human capital” have the greatest impact on the DESI index.
3. GDP per capita has a direct impact on a country’s DESI index.
4. The assumption that there is a relationship between the growth rate of GDP, the share of the ICT sector in GDP and the development of digital economy and information society was not confirmed.

In the author’s opinion, prospective research may include further inquiries into the structure of the DESI index and the impact of GDP on its individual indicators.

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IMPULSIVE BEHAVIOUR OF CUSTOMERS IN LARGE-FORMAT GROCERY SHOPS IN POLAND – A CASE STUDY

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JEL Classification: D12, D91, M31.

Key words: consumer behavior, impulsive behavior, unplanned purchases, marketing.

Abstract

The growing wealth of the Polish population noted in the recent years has led to a significant change in the behaviour of Poles as consumers. Increasingly often, the type and volume of purchases are dictated not only by real and objective reasons but also by impulse buying. In consequence, any retail outlet frequented by consumers to make purchases is no longer a place where thoroughly planned purchases are made, but a site where consumer needs are created by marketing activities. They are therefore a significant instrument of creating some influence on the consumer at the point of sale and multiplying the entrepreneur's revenue, which is particularly important in large retail grocery shops, where an average Pole buys most groceries. The study showed that the most significant determinants of impulse buying are the age and sex of consumers. Young people display quite a high level of impulse consumption. Because of their age, they do not attach much importance to planning expenses, which frequently leads to irrational spending. Impulse purchases are more often made by women, who most often do grocery shopping. Women also spend more time in shops than men do. As a result, they are more exposed to merchandising activities carried out in retail outlets. It has been noticed that the atmosphere in a shop and the consumer's mood while shopping have a significant impact on how much the consumer will buy. The amounts of products bought tend to increase when the consumer's mood is extreme (very good / very bad). It was also observed that a higher level of unplanned and impulse purchases is achieved by households with higher income, which in general allows them to buy more. The volume of unplanned and impulse purchases is distinctly higher in supermarkets and hypermarkets, which implicates much greater opportunities to use marketing strategies stimulating this type of purchases in such large shops than in small local shops.

ZACHOWANIA IMPULSYWNE KLIENTÓW WIELKOPOWIERZCHNIOWYCH SKLEPÓW SPOŻYWCZYCH W POLSCE – STUDIUM PRZYPADKU

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Kody JEL: D12, D91, M31.

Słowa kluczowe: zachowania konsumentów, zachowania impulsywne, zakupy nieplanowane, marketing.

Abstrakt

Wzrost zamożności polskiego społeczeństwa obserwowany w ostatnich latach doprowadził do istotnej zmiany zachowań konsumpcyjnych Polaków. Coraz częściej rodzaj i wolumen realizowanych zakupów nie jest zdeterminowany jedynie na podstawie realnych i obiektywnych przesłanek, lecz także wynika z „potrzeb chwili”. Tym samym placówka handlowa, w której są realizowane zakupy, przestaje być tylko i wyłącznie miejscem, gdzie możliwa jest realizacja zakupów przemyślanych i planowanych, ale coraz częściej staje się miejscem, w którym potrzeby są kreowane przez działania marketingowe. Stają się więc one istotnym narzędziem oddziaływania na klienta w miejscu sprzedaży oraz instrumentem wpływającym na zwielokrotnienie zysku przedsiębiorcy, co ma bardzo duże znaczenie, szczególnie w wielkopowierzchniowych sklepach handlu detalicznego, w których jest realizowanych większość zakupów przeciętnego Polaka. Przeprowadzone badania wskazują, że najistotniejszymi determinantami zachowań impulsywnych jest wiek oraz płeć. Osoby młode prezentują dość wysoki poziom konsumpcji impulsywnej. Takie jednostki ze względu na wiek nie przykładają dużej wagi do planowania wydatków, co skutkuje często nieracjonalnym wydawaniem pieniędzy. Skala zakupów pod wpływem impulsu w dużo większym stopniu dotyczy kobiet niż mężczyzn, które najczęściej zajmują się zakupami spożywczymi. Kobiety spędzają więcej czasu w sklepach niż mężczyźni. Konsekwencją jest to, że właśnie one są najbardziej narażone na działania merchandisingowe prowadzone w placówkach handlowych. Zauważono, że istotny wpływ na poziom zakupów (szczególnie nieplanowanych i dokonywanych pod wpływem impulsu) ma nastrój i samopoczucie klienta podczas wizyty w placówce handlowej. Ich poziom wzrasta szczególnie, gdy nastrój konsumenta przyjmuje skrajne pozycje (bardzo dobry/bardzo zły). Zauważono także, że więcej zakupów nieplanowanych i dokonywanych pod wpływem impulsu jest realizowanych przez gospodarstwa domowe lepiej sytuowane, których budżet pozwala na większe zakupy w ogóle. Wielkość zakupów nieplanowanych i impulsywnych jest zdecydowanie większa w przypadku sklepów wielkopowierzchniowych, co wskazuje na dużo większe możliwości stosowania działań marketingowych stymulujących sprzedaż bardziej w takich placówkach niż w małych sklepach osiedlowych.

Introduction

Everyone feels certain needs that they want to satisfy. According to economic theory, such needs are unlimited, while the resources which can be the basis for meeting the demand are limited (Solow, 1974, p. 257-276; Sobczyk, 2018, p. 172; Pasek, 2019, p. 62-63; Rudzewicz *et al.*, 2021, p. 15). Needs arise from an individual hierarchy of what each person needs, which

was underlined by Abraham Maslow in the 1940s (1943, p. 370-396). Maslow's model of a hierarchy of needs is composed of five levels, from physiological needs at the bottom to self-actualization at the top of the pyramid. Satisfying the needs of a lower level leads to the creation of new, higher-level needs (Maslow, 1943, p. 370-396; Szykuła-Piec, 2018, p. 282). The lowest rung on this ladder of needs refers to basic physiological needs, such as to satiate hunger or thirst, to have enough sleep, etc. These are the conditions that enable the survival of a human organism. Having satisfied these needs, an individual begins to feel higher-order needs, of which the need to ensure safety and security comes next (having a roof over one's head, permanent employment, comfortable remuneration system, health insurance, etc.). Ensuring security reduces fear and anxiety, which are a source of confusion in life and interfere with one's proper functioning. The needs of belonging and love are shared by nearly everyone from birth to adulthood, and are a consequence of living in society. Social contacts are essential for man, who needs acknowledgement and respect. The wish to satisfy these needs is rooted in one's desire to be accepted in a group. Satisfying the needs of this level means that one can feel wanted and useful. As a result, self-confidence increases and so does the motivation for further actions. If these needs are not satisfied, this situation has a destructive impact of an individual, leading to the sense of low self-esteem, helplessness and inferiority. The uppermost order of needs in Maslow's hierarchy is assigned to the need of self-actualization. This need appears in a range of different forms and intensities among people. The self-actualization need is a drive to act. It not only leads to greater independence and self-confidence, but also entails one's willingness to help others, which means that all society benefits from people being able to satisfy their needs of this order (Maslow, 1943, p. 370-396; Pasterski, 2016, p. 76-78).

Clayton Alderfer's (1969, p. 142-175) ERG theory is based on a concept similar to that of Maslow's hierarchy of needs. Both authors claim that people are motivated to act by the needs they have not yet satisfied. According to Alderfer, people feel needs constantly and dynamically. In contrast to Maslow's theory, which presumes the hierarchical order of needs, the essence of the ERG theory is that it allows for simultaneous occurrence of various needs. Alderfer also maintains that not being able to satisfy higher-order needs motivates an individual to make greater efforts to satisfy lower-order needs, thus emphasizing the return to satisfying more basic needs. The ERG theory identifies three groups of needs: existence needs, relatedness needs, and growth needs. The existence needs encompass physiological and material needs, such as food, water, security or permanent employment. Relatedness refers to the desire to make and maintain interpersonal contacts, which enables one to gain respect. The growth needs include the desire to progress to one's ideal self – and these needs were defined by Maslow as higher-order ones, placed on the two uppermost levels of his hierarchy (Acquah *et al.*, 2021, p. 25-29; Furnham, 2008, Gao 2022, p. 1106-1112; Miller-Zawodniak, 2012, p. 110, 111; Szykuła-Piec, 2018, p. 281, 282).

A detailed analysis of high-order needs was carried out by David McClelland (1961), who distinguished three groups: achievements, affiliations and power. The first group encompasses the needs of an individual to distinguish from others, to make progress and achievements. In that case, work can be a value in itself and becomes more important than remuneration. People who feel such needs tend to assume more responsibility for their actions. According to McClelland, a given need can be instilled in an employee through a set of influences and experiences. Another need identified in this theory is affiliation, which refers to the sense of belonging to a group. The key is to gain approval. Emotions of the loved ones are important enough for an individual to make concessions. In order to improve the efficiency and effectiveness of an employee, it is recommended to promote cooperation between all employees, e.g. group work, in addition to which tasks delegated to employees should call for creativity and flexibility. The third type of needs defined by McClelland is called the need of power. One can attempt to satisfy this need by making decisions, directing or supervising the work of others (Arnold *et al.*, 2005; McClelland, 1961; McClelland & Johnson, 1984; Miller-Zawodniak, 2012, p. 113-115).

According to Frederic Herzberg's (1969) two-factor theory, an individual strives to satisfy needs from two areas. One group comprises so-called hygiene factors, connected to the environment in which one carries out tasks and fulfils one's duties. These factors include relationships with employees, honesty and competence of employers, interpersonal relations, remuneration, intangible benefits, work versus personal life, physical surroundings of the job. When these needs are satisfied, a person feels greater motivation to perform their duties. The other group encompasses internal factors, which define one's positive or negative interpretation of activities or tasks. When a given activity is perceived positively, it yields the sense of satisfaction, pleasure and fulfilment. A person who feels such motivational factors experiences self-actualization and their actions become purposeful. When some activities are perceived negatively, the functioning of a person in the environment becomes distorted. The set of motivational factors includes: recognition, achievements, responsibilities, promotions, development opportunities, skills and competences, and work. Both groups of factors are closely correlated (Herzberg, 1969; Hitt *et al.*, 2017; Szykuła-Piec, 2018, p. 280, 281).

Douglas McGregor, who created Theory X and Theory Y (1960), pointed to two types of human personality and consequently different weights attached to particular needs by the different types of people. Type X stands for a lazy person, who avoids work, is unambitious, dependent on others, denounces any responsibility and needs supervision. One who identifies oneself as type X will work solely to satisfy basic needs. Type X performs their duties passively and tries to avoid punishment. On the other hand, type Y refers to ambitious people, willing to work and having a set goal, which is achievable owing to their employment. Work for type Y is not seen as an obstacle; on the contrary, it is perceived as a natural process. A type Y employee can make decisions independently,

organize their work duties, and supervise their performance. In reality, the division of people's behaviour as falling into the two types proposed by McGregor is highly unlikely to occur. Employees can naturally display characteristics of both types over different time periods (McGregor, 1960; Miller-Zawodniak, 2012, p. 111-113; Ciekanowski, 2017, p. 136).

Consumer behaviour encompasses the entirety of actions and perceptions, including one's preparation for making a choice, the actual moment of decision making, and consumption. Consumer behaviour as well as decisions are shaped under the influence of a multitude of factors, and therefore their choices are highly varied. Considering the pace of making a purchasing decision, these are divided into four types, i.e. based on extensive decision making, limited decision making, routine response, and impulsive buying (Rudzewicz, 2018, p. 21).

Extensive decision making entails a long time over which choices are made. The consumer participates in all phases of a decision-making process. The subject of the process are the goods that the prospective buyer has little purchasing experience with. The decision-related risk is high but the time for making a decision is relatively long. The goods typically bought this way are real estate, cars, etc. Limited decision making takes less time than extensive one. Same as before, the consumers progresses through all decision-making steps. However, the purchasing experience is greater because such goods have been acquired before, hence the risk is lower. Such choices are made when someone buys a TV-set or another car. Routine response relies on one's routine behaviour and experience. The decision maker does not pass through all decision-making phases. The time for making a decision is short and the risk low. Examples are decisions to buy a newspaper, groceries, etc. The factors shaping one's decision are a low price or intensive advertising. A characteristic of routine purchases is where these decisions are made, and most often it is the point of sale, which means the purchase is made without prior planning (Rudzewicz, 2018, p. 21, 22).

Purchases made on impulse are to be understood as buying products with certain characteristics: low price, mass produced, sold by self-service, promoted via comprehensive advertising and precise presentation at the point of sale, small size, and trouble-free storage. Impulse buying depends on both the marketing activities and individual characteristics of a consumer. Rook believes that "impulse buying occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately. The impulse to buy is hedonically complex and may stimulate an emotional conflict. Also, impulse buying is prone to occur with diminished regard to its consequences" (Rook, 1987, p. 190).

Impulse buying is often considered synonymous with unplanned buying. However, this is a gross oversimplification. Unplanned buying occurs when a consumer had previously decided what they wanted to buy and then would buy something else. This may or may not be due to an impulse decision. Unplanned purchases are commonly associated with negative activities. However, considerable profits can be achieved from unplanned purchases if the consumer controls their

behaviour. In many cases, the consumer does not receive precise information on products until they arrive at the point of sale, which can lead to making a decision to buy a particular product based on that insight. The lack of interest in an alternative range of goods can prevent the consumer from learning about other products, which may satisfy specific needs better (Falkowski & Tyszko, 2009, p. 275).

An impulse-driven consumer can be defined as one who enjoys shopping and who makes purchases on the spur of the moment. They feel benefits from shopping and tend to buy more than planned. People who are inclined to impulse buying feel a close bond to the proximity of goods, which influences their decisions. Such consumers also like new products, hence their shopping lists are not strictly controlled. Impulsive behaviour manifests itself differently in each person. It depends on every consumer's individual characteristics, his or her self-control, or on the intensity of stimuli (Gašiorowska, 2003, p. 13-20; Gašiorowska, 2013, p. 9). The factors that influence impulse buying can be divided into:

- individual variables, which create the buyer's propensity to buy on impulse;
- individual and situation-related factors, which influence the way a stimulus is perceived by a consumer;
- moderating factors, also stimulating the consumer's satisfaction.

People who are driven by emotions are often willing to buy more expensive or useless goods so as to satisfy their desires. The inclination to make purchases under the influence of emotions is considered to be a reflection of an individual's overall impulsiveness. A person who is highly likely to act on impulse often makes thoughtless, reckless decisions, disregarding consequences. Such people can also be seen as immature and irrational, who are prone to taking risk. Their decisions are characterised by high probability of being burdened by error.

High sensitivity to stimuli and the propensity to act on the spur of the moment characterise in particular the people who go shopping for relaxation and pleasure. For them, shopping is a form of entertainment, pleasant pastime and frequent activity. They often go shopping regardless of their material needs, and devote much time to this activity. Practice shows that these are more often women. Furthermore, women more often than men do daily shopping. As a result, they are more likely to come into contact with goods one can buy on impulse. When shopping, they often stroll slowly through a shop, compare products, pay attention to special offers and frequently enjoy shopping. Men are far less likely to do shopping. Also, they behave differently in shops. They most often pass through a shop quickly and decisively, looking for a specific product which they have previously decided to buy.

The consumer's emotions and mood have a significant impact on creating a situation in which impulse buying happens. Positive emotions lead to such impulse buying decisions far more often. However, negative emotions can also influence a consumer's decisions. By buying a product, the consumer may expect

to improve their mood. On the other hand, if negative emotions flare up, any desire to make purchases can be stifled.

The consumer can also be influenced by the atmosphere in a shop. It is perceived by such senses as sight, hearing, smell and, sporadically, taste. Hence, the layout of a sales area and arrangement of product play an important role, as it can evoke positive emotions, which encourage consumers to buy more. These are known as merchandising activities, the aim of which is to present the products and highlight their features in such a way as to attract the consumer's attention and encourage purchase decisions.

Research Aim and Object

Higher likelihood of unplanned or impulse buying is observed when larger shopping is done, for example weekly or monthly purchases. Spending extra money is less obvious when someone is buying more goods at a time (Gąsiorowska, 2003, p. 13-20). When someone goes to the shops in order to buy a few missing products, they are less vulnerable to marketing activities and thus more unlikely to make unplanned or impulse purchases. Therefore, it seemed reasonable to conduct a study regarding impulsive behaviour of customers in supermarkets and hypermarkets, where consumers most often make large purchases. This study was carried out in large-format grocery shops in the warmińsko-mazurskie province in Poland. The principal tool was a survey addressed to inhabitants of this province. Additionally, secondary data which characterised the households submitted to the study were derived from Statistics Poland. The respondents were divided into six age categories. Most were between 20 and 25 years of age (57%), followed by those between 26-35 (20%), and 36-45 years old (5%). Most live in a city with the population of over 100,000 (35%), or towns with up to 50,000 inhabitants (31%). Among the respondents, the dominant share of households consisted of two persons (41%), declaring the monthly net income of PLN 1,000 – 2,000 (33%) or 2,000 – 3,000 (26%) per person.

Results

The study showed that the population of the warmińsko-mazurskie province saw themselves as people largely succumbing to emotions (86%). 80% of the respondents admitted to making unplanned purchases. It is worth emphasising that the volume of purchases made on impulse is larger among women, who more often than men do grocery shopping (94%). Female consumers also more often consider shopping as a form of entertainment. Women spend more time in the shops than men, and more often perceive shopping as a pleasure rather than a duty. They are also more inclined to go shopping in order to improve

mood or to indulge themselves. In consequence, women are more exposed to merchandising activities carried out in retail outlets.

Based on the survey results, it is possible to conclude that impulse buying decisions are more often made by people aged 20-25 years. Unplanned purchases are least often made by consumer over 35 years old. A possible reason is that older consumers have more life experience and appreciate the value of money. Younger adults tend to cherish a high level of impulse consumption. Because of their young age, they do not pay much attention to planning their expenses, which frequently leads to some unreasonable spending.

Although women most often make unplanned purchases and are far more exposed to the risk of buying goods on the spur of the moment, they are also the ones who most often plan their expenses by making shopping lists. The survey revealed that it is the consumer's sex that is the only statistically significant factor in this respect (Tab. 1). Usually, women are responsible for buying groceries, and at the same time tend to have better knowledge of the household's current needs. 33% of the respondents buy only the products from their shopping list, while 70% claim that they make shopping lists but buy some other products. The respondents who do not make shopping lists and do not use such lists of necessary products prepared in advance composed 22% of the whole population surveyed.

Table 1
Statistics of relationships between the group of respondents making shopping lists and basic variables characterising respondents

Specification	A person doing the shopping			
	χ^2	df	P	Cramér's V
Sex	13.93127	3	0.00300	0.3625287
Age	7.476727	12	0.82457	0.1533353
Education	11.77715	9	0.22617	0.1924449
Place of residence	15.59148	9	0.07592	0.2214267
Occupation	7.954169	9	0.53877	0.1581553
Position/status in a household	4.579869	6	0.59871	0.1469801
Number of persons in a household	13.68437	18	0.74942	0.2094282
Number of own or foster children in a household	13.89291	12	0.30760	0.2173816
Monthly (net) income	12.46923	15	0.64322	0.1980187

Source: the author, based on the study results.

Making a shopping list does not exclude unplanned purchases. Adhering closely to the previously drawn list is predominantly typical of men. Despite planning ahead, women very often either buy products outside the shopping list or buy more products than planned. This, however, does not indicate that they are spendthrift or inconsistent; in fact, women are flexible in their search

for special offers or price discounts, which help them save money, although consequently the shopping basket may contain other products than planned.

It is also worth noting that women spend much longer in the shop when making purchases, they stroll more slowly along the aisles, and this enables them to gain better knowledge of the arrays of products available in a given shop and to spot more attractively priced alternative products. It also allows them to find the products which, although not on their shopping list, can be indispensable in the household, which means that they were absent from the shopping list not because they should have been added to it but because they were forgotten when that list was being drawn.

Women staying longer in the shop also means that salespeople have greater opportunities to manipulate their behaviour as shoppers. Because of the longer time of exposure to the merchandising instruments (e.g. smells, music, etc.), the likelihood of making unplanned purchases by women is greater. For this reason, the strategy of stimulating sales of groceries by increasing the share of unplanned purchases in total purchases, using appropriate marketing techniques, should be to a much larger extent orientated towards women than men.

Impulse buying is also influenced by the income achieved by consumers. As the income increases, so does the frequency of buying products on impulse. Households with a monthly income of over PLN 3,000 per family member buy more than they have planned in comparison to other, less wealthy households. Respondents with an income below PLN 2,000 per person make more rational purchases, looking for savings. This observation is important because if the shop owner knows what target customers the shop serves, if it is dominated by more or less wealthy customers, they can adequately shape the range and extent of the sales stimulating activities. In general, shops which are predominantly visited by less wealthy customers can be expected to use merchandising techniques less efficiently, which can have an impact on the decision by the shop owner if the use of such techniques, due to the costs it incurs, is economically justified at all.

This research proves that regardless of one's place of residence, the frequency of doing shopping (except bread) is most often once a week. This frequency was indicated by 73% of respondents. Consumers are far less likely to buy groceries less often. This frequency is synonymous with the number of visits to the shops, and this in turn determines the number of possible situations when the consumer's behaviour can be affected by merchandising tools. However, it should also be mentioned that when shopping is done less often, the customer will spend more time in a shop so as to be able to make large purchases, which means that the effectiveness of stimuli present in the shop will increase.

Respondents highlighted that the most important factor influencing the choice of doing the shopping is the availability of all products (67%). Other factors, such as proximity to one's home/place of work (42%), prices of products (39%), or the quality/freshness of products (38%) are less important. In consequence, consumers most often buy groceries in supermarkets or hypermarkets.

This in turn means that the volume of unplanned purchases can be higher and the economic effectiveness of a variety of merchandising techniques will improve owing to lower unit costs.

It can be claimed that in small shops, due to a modest flow of customers, low volumes of purchases made by individual customers, and a short time they spend in the shop, the level of unplanned purchases will be low, and the opportunities to stimulate impulse buying very limited, which questions the sense of using merchandising as a way to affect the volume of sales, and hence the levels of revenues and profit. In small shops, what matters more is the direct contact with a customer, often based on being acquaintances, which further limits the applicability of mentioned marketing approaches. Because of much greater anonymity in supermarkets and hypermarkets, it is possible to launch far more aggressive marketing strategies, not only encouraging to buy and emphasising positive characteristics of products, but also manipulating and penetrating, often intending to exponentiate the actual qualities of products.

This study has demonstrated that the largest percentage of respondents (37%), having entered a shop will first try to locate and put into a trolley the products they have planned to buy. This, however, does not mean that they buy only the products they have previously decided to purchase and cannot be a target of merchandising activities. As many as $\frac{1}{4}$ of respondents admitted to spending more time in a shop than needed to make planned purchases, and 29% added that this usually happens when they feel no time pressure related to the length of their stay in the shop.

The survey participants declared that they most often go shopping alone (82%). Doing grocery shopping with a spouse is not always possible, for example due to the other person's engagements (58%). Although buying groceries in company of one's spouse/partner does not happen often, their presence considerably affects the range of products bought (62%). The company of a cohabiting person often enables one to make purchases better adjusted to the household's needs (less risk of forgetting some products needed at home). On the other hand, it can stimulate an increase in the number of purchased non-essential goods. An increase in the volume of products put into the basket is also stimulated by the presence of friends (53%). Households are run differently, and the goods purchased will differ significantly among different households. A chance to see what a friend is buying might entice one to buy new products, which they have not bought before, or can remind one what they need to buy. A spontaneous decision to buy some items does not preclude the purchase of previously planned products.

When doing their shopping in large-format grocery shops, the respondents declared that they first consider the price (86%), quality (80%) and shelf life of products (75%). The products most often bought on impulse are: snacks (82%), confectionaries (77%), sweet pastries (60%), alcoholic (52%) and non-alcoholic beverages (51%). In retrospect, the respondents evaluate the usefulness of their impulse purchases as moderate (42%), high (38%) and very high (16%). This means

that although some groceries were bought on impulse, they are not considered to be useless. It is also worth noting that the additional products put into the trolley on the spur of the moment did not normally meant that the customer was unable to purchase other essential products (47%); rather, they supplemented the range of purchases or, as the respondents suggested, enabled the optimisation of their structure.

It has been observed that the weight of the factors influencing impulse buying and unplanned purchases is not identical for all groups of submitted to the survey. One of the key determinants in this regard was the monthly income per person in a household (Tab. 2).

Table 2

Statistics of relationships between the determinants of unplanned purchases and monthly net income of respondents

Specification	Monthly (net) income			
	χ^2	df	P	Cramér's V
Current mood	11.06172	5	0.05017	0.4125292
Presence of accompanying people	4.902218	5	0.42793	0.2746247
Atmosphere in the shop	3.285500	5	0.65606	0.2248247
Range of products sold	2.943918	5	0.70863	0.2128169
Special offers	11.80992	5	0.03749	0.4262523
Social and other campaigns	5.555538	5	0.35189	0.2923522

Source: the author.

Impulse purchases by households with higher incomes very often increase in volume in response to the consumer's mood. It was noticed that the respondents from this group make more unplanned purchases when they are in a good mood while shopping, which they define as the feeling of "joy/fulfilment" (82% of respondents), or – quite the opposite – when they are in a bad mood, which they identify as "sulking/sadness" (52%). In the former case, because of their positive attitude and emotions consumers restrain from evaluating the rationality of buying additional products, as a result of which their volume increases. In the latter case, shopping is a way to unwind, to detach oneself from the gloomy reality and to improve the mood. In both cases, consumers stay longer in the shop and more often add to their trolleys products which they have not planned to buy. As for households with lower incomes, this variable does not have a decisive effect on the behaviour of consumers. In that case, the main variable that differentiates the level of unplanned purchases are price discounts. Decisions made by representatives of lower-income households should be considered as more rational, and the usefulness of the purchased goods is higher. The main reason is the budget constraints that force these consumers to set a precise limit of the amount of money they can spend on groceries.

Price discounts are also important for households with higher incomes. However, the reason why they take advantage of special offers is different. For less wealthy consumers the main motivation to buy products at discount prices is the wish to achieve optimisation of expenses, in view of their limited budget, which often leads to a change in the structure of the previously planned shopping basket. On the other hand, respondents who do not face the challenge of a limited budget perceive price discounts as contributing to the higher level of consumption without forcing them to change decisions on planned purchases, that is without changing the structure of the basic basket. Consequently, the aforementioned sales strategies (including merchandising techniques) should be adjusted to the target group of consumers. Grocery retail outlets situated in locations with large populations, residential estates densely filled with blocks of flats, where the majority of local shoppers are people with low or average incomes should base their sales strategy primarily on price discounts. However, when most of customers are people with a higher level of income, apart from price discounts, and possibly first and foremost, the sales strategy should rely on more intensive merchandising activities. It has been observed that such customers are more sensitive to a wider spectrum of stimuli, which can affect the level of their unplanned purchases. Among these stimuli, the appearance of the place of sale and the display of products have the strongest impact on the consumer's behaviour while doing shopping.

Merchandising activities such as playing music in a retail outlet are particularly common during festive seasons. However, depending on the nature of the sales, such activities can be carried out daily. Nevertheless, it has been determined that affecting the consumer's sense of smell rather than hearing is more effective (75%). For example, when there is a bakery in a large-format grocery shop, the smell of freshly baked bread stimulates the taste buds of customers, which encourages them to buy more groceries. It is therefore possible to increase sales by using various techniques that will affect consumers' sense of smell, e.g. offering hot meals, using air fresheners or scented candles.

According to the respondents, the strongest impact on their behaviour in a shop is produced by what they see there (83%). If a customer sees that the shop is tidy, they feel more comfortable. And as their feeling of comfort intensifies, consumers are more likely to indulge in impulse buying. Thus, retail outlets should focus on the best possible management of work at the point of sale, for example to display products on right shelves promptly and in a visually appealing manner, to keep the shop tidy, and to take care of the overall harmony in the shop.

The study did not reveal any statistically significant dependences in the evaluation of factors influencing purchases made at the checkout counter (Tab. 3).

Table 3

Statistics of relationships between purchases in the checkout area and basic variables characterising the respondents

Specification	Making purchases at the checkout			
	χ^2	df	P	Cramér's V
Sex	0.0684718	1	0.79358	0.0254075
Age	5.084549	4	0.27873	0.2190147
Place of residence	2.036444	3	0.56488	0.1386064
Occupation	1.625626	3	0.65359	0.1238390
Position/status in a household	5.700691	3	0.12712	0.2319054
Number of persons in a household	0.9397248	2	0.62509	0.0941559
Number of own or foster children in a household	3.589629	6	0.73201	0.1857839
Monthly (net) income	2.446261	4	0.65428	0.1579932
Place of residence	3.771093	5	0.58282	0.1886169

Source: the author, based on the study.

The respondents most often declared that they rarely buy products at the checkout counter (47% of the respondents), or only sometimes (25% respondents), regardless of the variables applied to distinguish different categories of the surveyed population (i.e. level of income, age, sex, etc.). On the one hand, such a low level of purchases at “the aisle of temptation” may be disappointing; on the other hand, it may indicate that all groups of customers are reached there to a similar degree. In consequence, although products in the checkout area are bought relatively unfrequently, the total sales in this part of the sales floor can be significant for the whole shop. The major variables which stimulate unplanned purchases while waiting at the checkout, according to the respondents, are low prices of products displayed there (37% of the respondents), having to wait in a queue (36%), and the uniqueness of products that cannot be found anywhere else in the shop (32%). The respondents also admitted that they are sometimes enticed by the cashier, especially when they are encouraged to buy products included in some competition campaigns, loyalty programmes, etc. To recapitulate, it would be unwise to question the usefulness of merchandising activities in “the temptation aisle” leading to checkouts, but it is worth bearing in mind that any effects on consumers through this channel should be considered just as just an element adding to the overall strategy of influencing shoppers, implemented for the whole sales floor of the shop, arising from an analysis of the target consumers and based on the selection of most effective tools, stimulating both planned and impulse buying decisions.

Conclusions

The growing wealth of the Polish population noted in the recent years has led to a significant change in the behaviour of Poles as consumers. Increasingly often, the type and volume of purchases are dictated not only by real and objective reasons but also by impulse buying. Thus, any retail outlet frequented by consumers to do shopping is no longer a place where carefully planned purchases are made, but a site where consumer needs are created by marketing activities. As a result, there is an increasing share of unplanned purchases and purchases made at the spur of the moment. Modern marketing activities are becoming an important instrument of influence on the customer at a site of sales, and a tool to exponentiate the entrepreneur's revenues. Because most grocery shopping takes place in large-format retail outlets, this is where significant opportunities for launching marketing and merchandising activities are opening up.

This study provided evidence supporting the following conclusions:

1. The main determinant of impulse buying are individual personality traits of consumers as well as the mood and emotions which accompany the buying process; 86% of the respondents, living in the warmińsko-mazurskie province, admitted that they are largely sensitive to emotions, which in their opinion is one of the main reasons for making unplanned purchases (80% of the respondents).
2. The basic variables differentiating impulsive behaviour of consumers in large-format grocery retail outlets are sex, age and income.
3. Impulsive behaviour is more often demonstrated by women, who also more often do grocery shopping (94%); women spend more time of shops than men, which makes them more exposed to merchandising activities carried out in shops; also, women quite often treat shopping as a pleasure rather than a duty.
4. It has been noted that more wealthy respondents achieve a higher level of unplanned expenses when they are in a good mood, identified by them as "joy/fulfilment" (82% of the respondents) while shopping, or – quite the opposite – when they are in a bad mood – "sulking/sadness" (52%); in the former case, because of their positive attitude and emotions consumers try not to evaluate the rationality of buying additional products, which makes the volume of impulse purchases rise considerably; in the latter case, shopping becomes a way to unwind, to break away from the gloomy reality and to improve the mood; in both cases, such customers spend more time in the shop and more often put into the shopping basket additional products that they have not planned to buy (this variable did not have a decisive effect on the behaviour of consumers from lower-income households); women more often than men do shopping in order to improve their mood.
5. Decisions to buy products on impulse are most often made by young adults, aged 20-25 years (52%); these consumers rarely attach importance to planning their expenses, which leads to irrational spending.

6. As the household's income increases, so does the frequency of impulse buying; households with over PLN 3,000 of the monthly net income per member of the family tend to buy more than they have planned in comparison with less wealthy households.

7. The level of unplanned or impulse buying of groceries is not lower in the case of consumers who make shopping lists; even though women most often make unplanned purchases and are far more exposed to the risk of buying products under the influence of emotions or on impulse, they are also the ones who most often plan their expenses by making shopping lists; 33% of the respondents buy only the products they have put on shopping lists, while 70% declare that they do use shopping lists but also buy other products; 22% of the surveyed population neither make nor use lists of products they need to buy; however, the fact that a consumer has made a shopping list does not preclude impulse buying; adhering strictly to one's shopping list is primarily typical of men; despite planning their shopping in advance, women very often buy products outside their shopping lists or else they buy more than planned; this however does not implicate extravagance or inconsistency; instead, it proves that women are flexible shoppers, looking for special offers and discounts, which enable them to make savings; as a result, the shopping basket may not necessarily contain exactly the products planned previously.

8. The level of unplanned and impulse buying in the case of grocery shopping is higher when consumers do the shopping in the company of others.

The study emphasises the prevalence of impulse buying as a form of shopping. In all the analysed groups of consumers, there are behaviours indicating that products are purchased on impulse. A consumer going to any shop (small or large one) is exposed to activities which aim to stimulate consumption. However, it should be underlined that the way unplanned purchases are stimulated depends on the type of retail outlets. In small shops, because of the modest flow of customers, low volumes of purchases made by individual consumers, and their brief visits in the shop, the level of unplanned purchases will be low, and opportunities to stimulate impulse buying are quite limited. In large-format shops, it is possible to take advantage of much more aggressive marketing, often not only encouraging purchases and highlighting values of products, but also manipulating and penetrating, where qualities of products are exponentiated relative to the actual properties.

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THE LIFE AND NON-LIFE INSURANCE MARKET IN THE EUROPEAN UNION

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Key words: life and non-life insurance, insurance market, European Union.

Abstract

The article discussed on the situation of the life and non-life insurance market in the European Union as seen at the end of 2022. The market analysis was based on data derived from the European Insurance and Occupational Pensions Authority (EIOPA) and the Organization for Economic Cooperation and Development (OECD) and included such factors as the number of insurers, the division into life insurance and non-life insurance, and the key market indicators (written premium, density and penetration rates, and concentration index).

The collected data shows the life and non-life insurance market in 27 European Union Member States. The largest number of insurers is in the French, German and Luxembourg markets, the smallest in the Slovak, Estonian, Lithuanian and Latvian markets. It was noted that the more insurers sell insurance in a country, the lower the concentration ratio. Germany and France had the largest share of the global business insurance market in 2022 from EU countries. Overall, EU residents in 2022 spent more on life insurance (€652.2 billion) compared to non-life insurance (€495.2 billion). Residents of EU countries spend most of their life insurance money on index-linked and unit-linked insurance and insurance with profit participation. The largest share of EU residents' non-life insurance spending is in: Fire and other damage to property insurance, Motor vehicle liability insurance and Other motor insurance.

Just as these countries differ significantly in economic terms, they also do so from the life and non-life insurance market standpoint.

RYNEK UBEZPIECZEŃ NA ŻYCIE I UBEZPIECZEŃ MAJĄTKOWYCH W UNII EUROPEJSKIEJ

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Kody JEL: G22, G15.

Słowa kluczowe: ubezpieczenia na życie i majątkowe, rynek ubezpieczeń, Unia Europejska.

Abstrakt

W artykule przedstawiono sytuację rynku ubezpieczeń gospodarczych w Unii Europejskiej na koniec 2022 r. Analizę przeprowadzono na podstawie danych EIOPA (European Insurance and Occupational Pensions Authority) oraz OECD (Organization for Economic Cooperation and Development), uwzględniając liczbę ubezpieczycieli, podział na ubezpieczenia na życie oraz ubezpieczenia majątkowe oraz najważniejsze wskaźniki rynkowe (przypis składki, wskaźnik gęstości i penetracji, koncentracji).

Zebrane dane pokazują rynek ubezpieczeń w 27 państwach Unii Europejskiej. Najwięcej zakładów ubezpieczeń jest na rynku francuskim, niemieckim i luksemburskim, najmniej na rynku słowackim, estońskim, litewskim i lotewskim. Zauważono, że im więcej ubezpieczycieli sprzedaje ubezpieczenia w danym państwie, tym niższy wskaźnik koncentracji. Największy udział w rynku ubezpieczeń gospodarczych na świecie w 2022 r. z państw EU miały Niemcy i Francja. Ogółem mieszkańcy EU w 2022 r. więcej wydali na ubezpieczenia na życie (652,2 mld EUR) niż na ubezpieczenia majątkowe (495,2 mld EUR). Mieszkańcy państw EU najwięcej pieniędzy z tytułu ubezpieczeń na życie wydają na ubezpieczenie indeksowane oraz ubezpieczenie z udziałem w zyskach. Największy udział w wydatkach na ubezpieczenia majątkowe mieszkańców EU stanowią ubezpieczenia: od ognia i innych szkód majątkowych, odpowiedzialności cywilnej posiadaczy pojazdów mechanicznych oraz inne ubezpieczenia komunikacyjne.

Tak jak pod względem gospodarczym państwa te bardzo różnią się między sobą, tak też jest to zauważalne w ubezpieczeniach na życie i majątkowych.

Introduction

The insurance market plays a profound role in the overall financial market as insurance companies are among the world's largest investors, with assets running into trillions of dollars (Dawd & Benlagha, 2023). Its stability may substantially affect the stability of the entire financial system (Hadula *et al.*, 2021). The relationship between insurance and economic growth has become stronger over the past few years due to the increasing contribution of the first into the financial sector, and this issue has been addressed in many scientific works (Lee *et al.*, 2013; Dawd & Benlagha, 2023; Horng *et al.*, 2012; Kjosevski,

2012; Lee *et al.*, 2016; Rousseau & Wachtel, 2011; Fenn *et al.*, 2008). Despite gaining importance in financial intermediation, the role of insurance companies is still inferior compared to that of the banking and stock markets. Moreover, the relationship between insurance and economic growth is noticeably affected by the real interest rate and the level of economic development. Therefore, the insurance market deserves more attention in the analysis of the financial sector and macroeconomic policy (Haiss & Sümegi, 2008).

Noteworthy is also the likely effect of insurance services on hampering growth by reducing the incentive for insured persons to behave prudently and limit losses. Potential customers can adjust their behavior to the price level of the desired insurance product. The insurance services can also lead to the opposite situation, where the insured feels relieved from taking precautions against the secured event, which is referred to as moral hazard (Cummins & Doherty, 2006).

Over the past three decades, the European insurance sector has undergone a profound transformation both institutionally and in the competitive environment and distribution channels. EU directives have increased the level of competition in the insurance market. Consistent consolidation has changed the competitive landscape: it has increased price and product competition, improved service quality and affected insurers' efficiency (Moro & Anderloni, 2014).

The purpose of the article is to analyze the situation in the life and non-life insurance market in the European Union at the end of 2022. In the analysis, the number of insurers, the division into life insurance and non-life insurance and the most important market indicators: premium written, density and penetration rate, concentration index were taken into account. The market analysis was based on data derived from the European Insurance and Occupational Pensions Authority (EIOPA) and the Organization for Economic Cooperation and Development (OECD).

Insurance Companies

The analysis of the situation on the EU insurance market took into account the number of insurers that offer insurance services to their clients, which according to EIOPA data for the EU Members States countries was 2,369 in 2022 (Fig. 1).

The largest number of insurance companies operated on the French (444), German (331) and Luxembourg (260) markets, which accounted for 43.7% of all EU companies. Less than ten insurers operated on the Slovak, Estonian, Lithuanian and Latvian markets. In Poland, insurance services were offered by 52 domestic insurance companies, which accounts for 2.2% of the EU market.

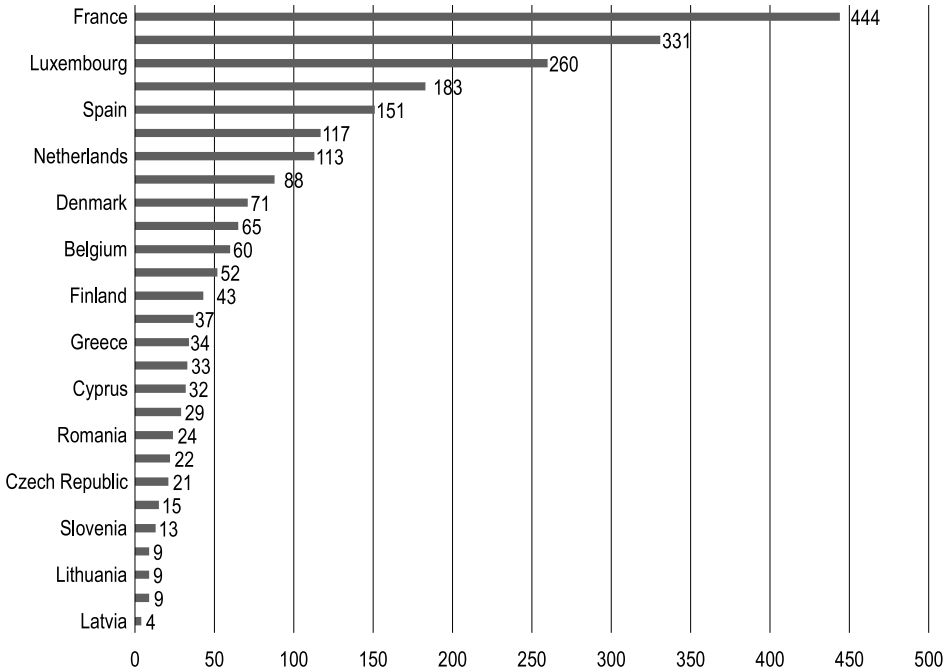


Fig. 1. Number of insurers in EU

Source: own work based on data from: Insurance Statistics (2023).

Concentration of the Insurance Market

Market concentration indicates the market share of 3, 5 or 10 insurers in a given country in terms of gross written premiums (Figs. 2, 3). In the countries where the number of insurers is not large, three insurers had 100% share in the life insurance market (Latvia, Estonia – Fig. 2), and non-life insurance market (Lithuania – 95%, Latvia – 94% and Estonia – 85% – Fig. 3). There was also a high concentration in the life insurance market in Malta (88%), Lithuania (87%), Slovakia (85%) and Finland (78%), and in the non-life insurance market – in Slovakia (78%), Romania (67%) and Finland (61%). The lowest concentration index for the three life insurance companies in the EU was noted in Germany (24%), Ireland (30%) and France (31%), and in the case of non-life insurance – in Cyprus (30%), Germany (31%), Greece (33%) and Spain (35%). Therefore, it may be concluded that the more insurers sell insurance products in a given country, the lower the concentration index therein.

The average concentration index for three insurance companies offering life insurance in the EU was 54%, for five companies it reached 67%, and for ten – 82%. In the case of non-life insurance, the concentration index reached 62%, 76%, and as much as 92% for three, five and ten insurance companies, respectively.

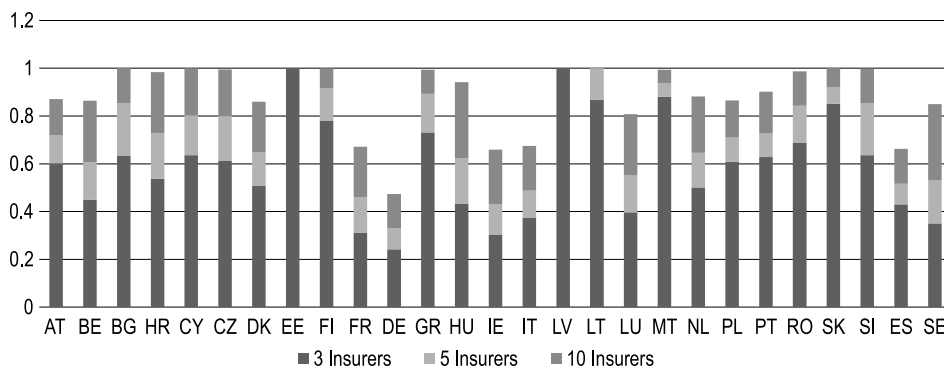


Fig. 2. Life concentration

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

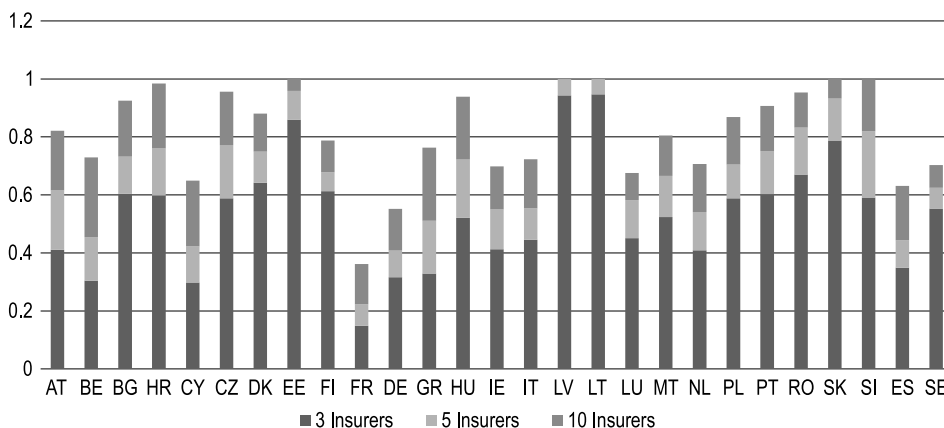


Fig. 3. Non-Life concentration

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

Gross Written Premium

One of the methods deployed to assess the size of the insurance market is the analysis of gross written premium. There are different levels of gross written premiums collected in individual European countries, which, undoubtedly, depends on competition in a given market, maturity of demand, as well as the social security system in a given country (Moro & Anderloni, 2014).

In 2022, all 27 Member States of the European Union collected EUR 1,150 billion of gross written premiums in total, and the amount of the written premium varied in individual countries from EUR 295 billion in France to EUR 459 million in Latvia (Fig. 4). In the case of seven countries (Latvia, Lithuania, Estonia, Cyprus, Bulgaria, Croatia, Slovakia), the written premium was below

EUR 2 billion. In another seven countries (Slovenia, Romania, Hungary, Greece, Malta, Czech Republic and Finland), it ranged from EUR 2.5 to EUR 8.3 billion. These were followed by another group of three countries (Portugal, Poland, Austria), where the total written premium ranged from EUR 11.1 to EUR 19.3 billion. In Sweden, Denmark, Belgium, Luxembourg, Spain, Ireland and The Netherlands, it ranged from EUR 37.6 to EUR 80.7 billion, whereas the highest total written premiums were recorded in France (EUR 294.9 billion), Germany (EUR 251.1 billion) and Italy (EUR 131.5 billion).

The Eurobarometer survey conducted by the EIOPA in 2023 indicates that around one third of EU consumers have seen an increase in insurance premiums for Motor insurance (by 32%), Household insurance (by 29%) and Accident and Health insurance (by 27%) (EIOPA's Eurobarometer Survey, 2023).

Among all EU Member States, Germany and France were the largest contributors to the global business insurance market in 2022 (with their share accounting for 6.06% and 5.75%, respectively). According to this data, the United States were the leaders of the global market (57.73% share), whereas the United Kingdom – of the European market (7.36%) (National Insurance Market Share, 2023).

Looking at the product division into the life insurance and the non-life insurance, it was noticed that EU residents spent EUR 652.2 billion on life insurance and EUR 495.2 billion on non-life insurance products. In addition, the non-life insurance products predominated in 17 EU Member States. Given the structure of expenditures on business insurance, residents of Bulgaria, Romania, Lithuania and The Netherlands spent less than 20%, whereas those from Italy and Denmark – over 70% on life insurance.

Other important indicators of the insurance market development observed through the gross written premium are the density and penetration rates. These two coefficients are deployed to assess the situation of an individual country market and compare it with the markets of other countries (Zheng *et al.*, 2008).

The density rate indicates the gross written premium per capita of a given country. In 23 EU Member States (all except Ireland, Malta and Luxembourg), an average resident's spending on business insurance reached EUR 2,254 (i.e., EUR 715 on life insurance and EUR 1,539 on non-life insurance) (these data come from the EIOPA website Indicators from Financial Stability Reporting, 2023). The highest expenditures on life insurance were noted among the residents of Denmark (EUR 5,444), Sweden (EUR 2,765), France (EUR 2,669) and Germany (EUR 1,954), and on non-life insurance – among the residents of Denmark (EUR 7,261), The Netherlands (EUR 4,823), France (EUR 4,518) and Sweden (EUR 3,964). Residents of Romania (EUR 161), Latvia (EUR 277) and Lithuania (EUR 343) were found to spend the least on business insurance.

Another important indicator describing the insurance market is the penetration rate, i.e., the share of gross written premiums in gross domestic product. The insurance penetration rate shows the relative importance of the

insurance sector in a country’s overall economic performance. In the EU, the average penetration rate of 2022 was 6.0%, including 3.7% for life insurance and 2.3% for non-life insurance. The highest total penetration rates were recorded in Luxembourg (31.9%), Sweden (11.1%), Denmark (10.3%) and France (10.3%) (Insurance Indicators, 2023).

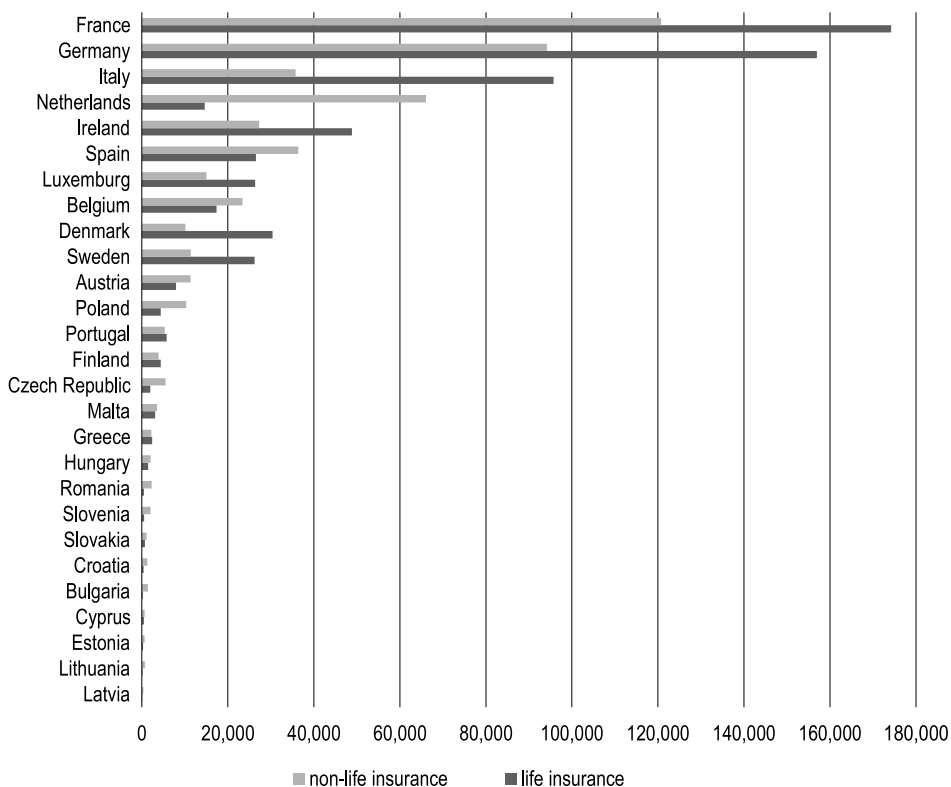


Fig. 4. Premiums in EU (EUR million)

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

Structure of Life Insurance and Non-Life Insurance

When analyzing the life insurance market, it is also important to pay attention to what type of protection the residents of a given country are looking for. Expenditures on different types of insurance vary significantly across countries (Fig. 5). Inflation has a major impact on the purchase of life insurance products as it reduces the value of insurance policies and makes them less attractive (Feyen *et al.*, 2011). In consequence, after a sharp increase noted in 2021, the gross written premiums in life insurance decreased in 2022 for all types of life

insurance products (*Impact of Inflation on the Insurance Sector, 2023*). Residents of EU Member States were noted to spend most on index-linked and unit-linked insurance (42.7%) and insurance with profit participation (25.4%).

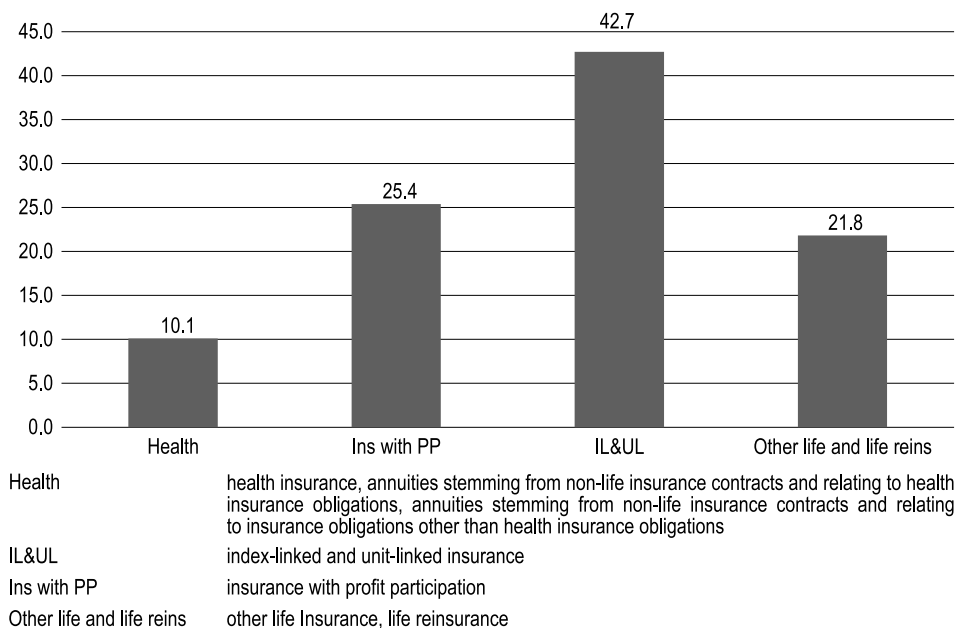


Fig. 5. GWP split by type of life insurance

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

The health insurance sector is crucial to the functioning of the economy as it contributes to economic growth and financial stability (Hadula *et al.*, 2021). The highest expenditures on health care are observed among the residents of Malta (47%), Germany (40%), Austria (33%) and Greece (23%) (Fig. 6). In turn, residents of Spain and Portugal have no spendings, whereas those from Italy, Bulgaria and Sweden spent only 1% of their expenditures on private health care. Expenditures on private health care under business insurance depend on the public health care systems of individual countries and follow a known pattern: the greater the public care, the lower the spending on private health care.

Traditional guaranteed products with profit participation mechanisms are usually designed to protect consumers against market shocks, ensuring stable and, in many cases, guaranteed profits. However, during a prolonged period of high inflation, consumers typically face its negative effects because the guaranteed return is often lower than inflation, especially for the products designed during periods of low or normal inflation. The highest expenditures on insurance with profit participation are observed among the residents of Croatia (64%), Italy (62%)

and Belgium (59%), whereas the lowest ones – among those from Ireland and Cyprus (5%) and Poland (7%). Most often, the index-linked and the unit-linked protection insurance was purchased by residents of Finland (87%), Sweden (79%), Cyprus (77%) and Ireland (68%), and the least frequently – by residents of Malta (only 2%), Germany (17%) as well as Poland and Croatia (18%). After the unstable situation in 2020-2021, 2022 showed that EU consumers were looking for products ensuring higher profits.

In the case of other life and life reinsurance type products, the highest expenditures were made by Poles (63%), Spaniards (60%) and Romanians (47%), and the least ones by the residents of Sweden (2%), Italy and Lithuania (3%) and Austria (4%).

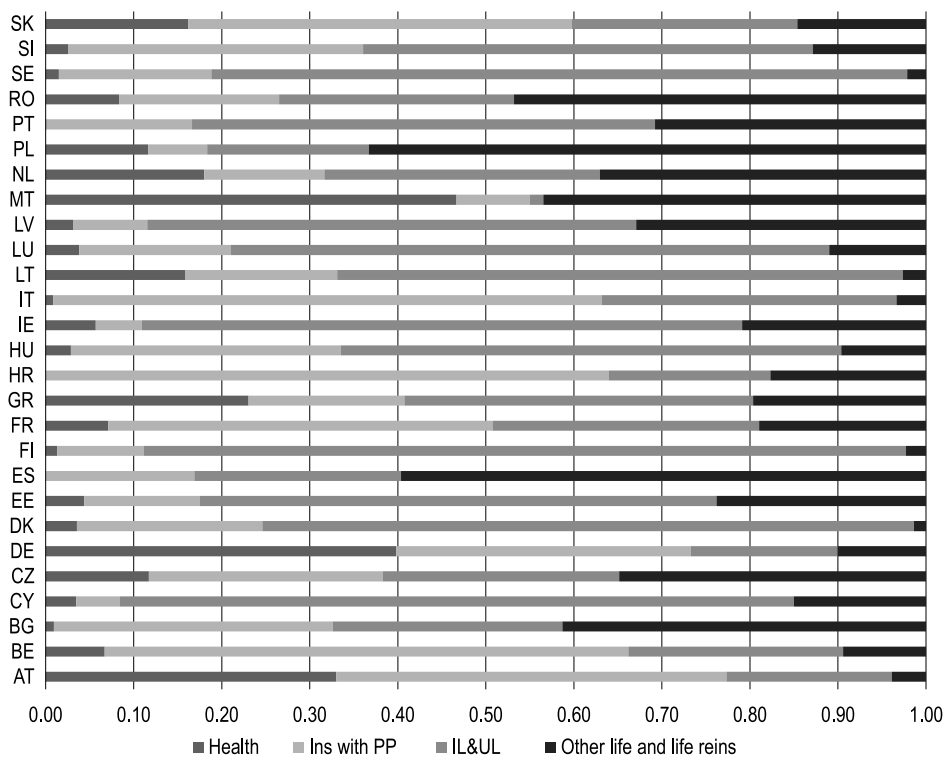


Fig. 6. GWP split by type of life insurance per country

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

Property insurance covers a broad range of services, which may protect people, their property or legal obligations. The European Insurance and Occupational Pensions Authority classifies non-life insurance into twelve groups: Assistance; Credit and suretyship insurance; Fire and other damage to property insurance; General liability insurance; Income protection insurance; Legal expenses

insurance; Marine, aviation and transport reinsurance; Medical expense insurance; Miscellaneous financial loss; Motor vehicle liability insurance; Other motor insurance; and Workers' compensation insurance (Fig. 7). Among the residents of the EU Member States, the greatest expenditures in the non-life insurance sector were made on: Fire and other damage to property insurance (23.8%), Motor vehicle liability insurance (21.7%), Other motor insurance (15.9%) and Medical expense insurance (13.8%), whereas the smallest ones – on Legal expenses insurance (0.9%) and Workers' compensation insurance (1.7%).

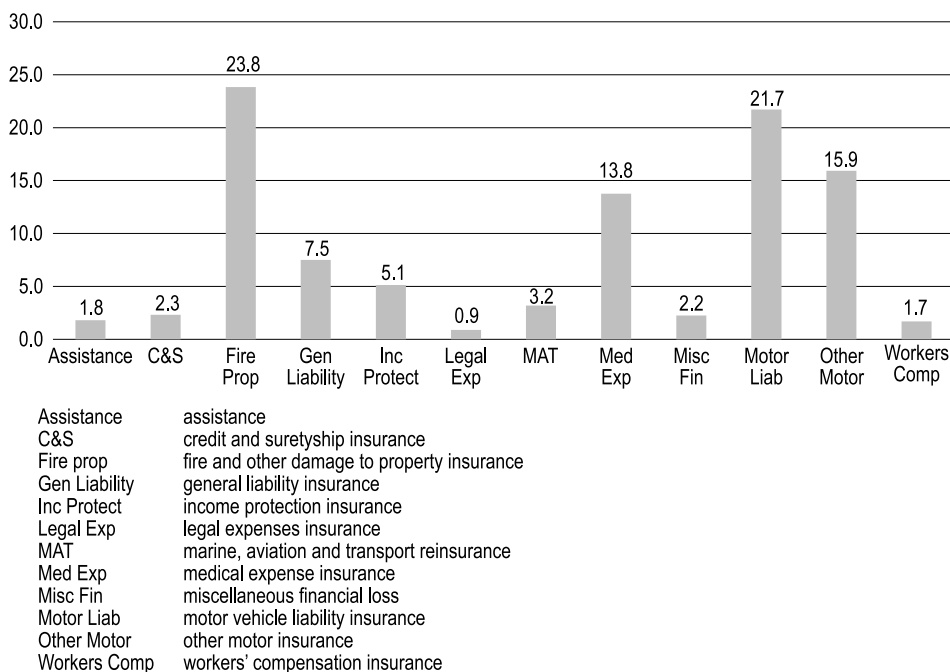


Fig. 7. GWP split by type of non-life

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

The analysis of the situation of individual EU countries in terms of the structure of expenditures on non-life insurance shows significant differences among them. The greatest spendings are made on Assistance insurance by the residents of Greece (6.7%), Poland (3.7%) and Portugal (3.6%), and the lowest ones by those living in Finland, Austria and Sweden. In turn, the highest expenditures on Credit and suretyship insurance are recorded among the Belgians (9.8%), Luxembourgers (9.0%) and Spaniards (6.3%), and the lowest ones among the Dutch and Swedes (0.1%) and Greeks (0.5%). In turn, the residents of Sweden (40.5%), Germany (35.9%), Denmark (32.5%) and Austria (32.4%) spend the

most whereas those of Denmark (6.4%), Romania (15.0%) and Portugal (16.3%) spend the least money on the Fire and others damage to property insurance.

Another important non-life type insurance is the General liability insurance. The largest share of this product in the total expenditure structure is noticeable in Luxembourg (25.7%), Ireland (22.8%) and Denmark (14.7%), and the smallest one in The Netherlands (1.6%), Portugal (2.5%) and Lithuania (3.2%).

The share of the next product – Income protection insurance – in the total expenditure structure is at 5%. The residents of Denmark (13.1%), Austria (12.5%) and Italy (10.8%) were found to spend the most, whereas Romanians (0.6%), Cypriots (0.9%) and Greeks and Finns to spend the least (1.8%) on this type of protection.

Legal Expenses Insurance is another non-life insurance product. Its largest share in the expenditure structure was observed in Austria (4.9%) and Germany (4.0%), and the smallest one (below 0.1%) in Bulgaria, Czech Republic, Denmark, Croatia, Poland, Romania and Slovenia. A clear preponderance in the structure of expenditures on Marine, aviation and transport reinsurance products was held by Cyprus (16.0%) and Luxembourg (11.2%), whereas the smallest contributors turned out to be Slovakia (0.5%) as well as The Netherlands and Lithuania (0.6%).

Medical expense insurance products are also available in the non-life insurance group. The highest expenditures on the Medical expense insurance were spent by the residents of The Netherlands (78.4%), which is due to the medical care system adopted therein, followed by the residents of France (32.8%) and Portugal (30.3%), whereas the lowest ones – by the residents of Austria (0.4%), Germany (1.7%) as well as Czech Republic and Luxembourg (2.3%).

Miscellaneous financial loss was the type of protection popular in Malta (11.3%), Luxembourg (5.8%) and Ireland (5.0%). The smallest share of spending on this type of insurance was recorded in Bulgaria (0.3%) as well as Romania, Slovenia and The Netherlands (0.5%). Workers' compensation insurance had a significant share in customer spending on non-life insurance in Finland (11.4%) and Portugal (15.1%). In turn, the residents of Austria, Estonia, Greece, Croatia, Lithuania, Latvia, Poland, Slovenia, and Slovakia did not purchase this type of protection.

Motor insurance accounts for a large share in the structure of expenses for non-life insurance, which is unbeneficial to insurers. In 9 countries, the expenditures on this insurance product accounted for more than half of all non-life insurance expenditures. The highest expenditures on Motor insurance policy were made by the residents of Romania (69.8%, including 43.2% on Motor vehicle liability insurance and 26.6% on Other motor insurance), Bulgaria (56.7%, including 33.3% and 23.4%, respectively) as well as Latvia (55.8%, including 32.2% and 23.6%, respectively). The least share of the Motor insurance in the expenditure structure was noted in The Netherlands (7.9%, including 4.5% on Motor vehicle liability insurance and 3.4% on Other motor insurance) and in Luxembourg (13.5%, including 9.5% and 4.0%, respectively).

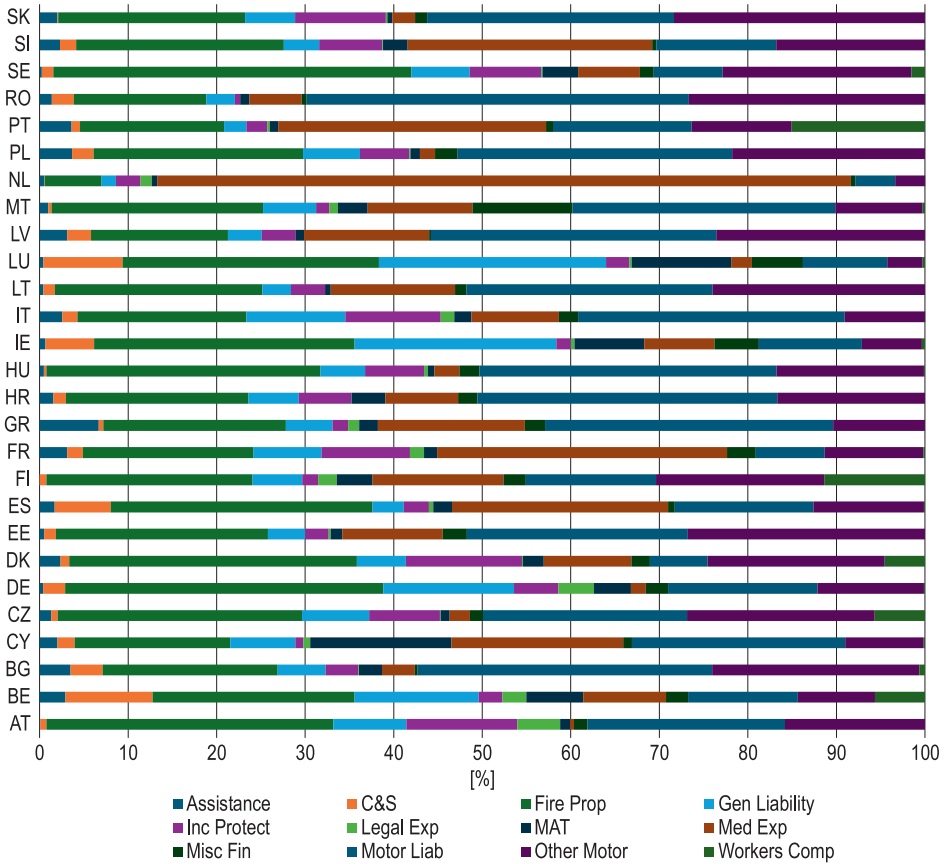


Fig. 8. GWP split by type of non-life insurance per country

Source: own work based on data from: Indicators from Financial Stability Reporting (2023).

Conclusions

The purpose of the article was to analyze the situation of the life and non-life insurance market in the European Union at the end of 2022 based on data provided by the European Insurance and Occupational Pensions Authority and by the Organization for Economic Cooperation and Development. Analyses of the number of insurers, expenditures on the insurance sector considering the division into life insurance and non-life insurance, and the most important market indicators (written premium, density and penetration rates, concentration index) enabled demonstrating differences between individual EU Member States.

Despite the fact that the insurance market has changed after 1990, a different approach to life and non-life insurance and related expenses is still noticeable in the post-communist countries. “Institutional and cultural

features of insurance markets still vary widely from country to country” (Lament & Bukowski, 2023). Based on the number of insurers, France and Germany, with the lowest concentration index and the highest written premiums, have turned out to be leaders among the EU countries. Given the situation observed in the European Union Member States, the insurance market is still at the beginning of development in Latvia, Lithuania, Estonia, Slovakia, Slovenia, Romania, and Bulgaria.

The largest number of insurers operate in the French, German and Luxembourg markets, while the smallest number of insurers are in the Slovak, Estonian, Lithuanian and Latvian markets. It was noted that the more insurers sell insurance in a country, the lower the concentration rate. Overall, EU residents spent more on life insurance in 2022 (€652.2 billion) compared to non-life insurance (€495.2 billion). Residents of EU countries spend most of their life insurance money on index-linked and unit-linked insurance (42.7%) and insurance with profit participation (25.4%). The largest shares of EU residents’ spending on non-life insurance are: Fire and other damage to property insurance (23.8%), Motor vehicle liability insurance (21.7%), Other motor insurance (15.9%) and Medical expense insurance (13.8%), and the smallest are Legal expenses insurance (0.9%) and Workers’ compensation insurance (1.7%).

Differences between developed and developing countries are also noticeable in their expenditures on various types of business insurance.

Translated by Joanna Molga

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DEPOPULATION IN RURAL AREAS OF THE WARMIA AND MAZURY VOIVODESHIP

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Abstract

The aim of the article was to analyse and evaluate the situation of rural municipalities and rural areas located in urban-rural municipalities in the Warmia-Mazury voivodeship in terms of the phenomenon of depopulation in 2012-2022. The study uses the method of classification of territorial units created by J. W. Webb (1963). The phenomenon of depopulation intensified in rural municipalities and in rural areas in urban-rural municipalities. The element mainly influencing depopulation during these years was population emigration. The deterioration of the population situation in the study areas was also associated with a decline in natural increase. Considering the changes that took place in the years under study and their intensity, it can be concluded that in the coming years the phenomenon of depopulation will begin to develop with even greater force and dynamism.

**DEPOPULACJA NA OBSZARACH WIEJSKICH WOJEWÓDZTWA
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Sł o w a k l u c z o w e: depopulacja, obszary wiejskie, województwo warmińsko-mazurskie.

A b s t r a k t

Celem artykułu była analiza i ocena sytuacji gmin wiejskich oraz obszarów wiejskich znajdujących się na terytorium gmin miejsko-wiejskich w województwie warmińsko-mazurskim pod względem zjawiska depopulacji w latach 2012-2022. W badaniu wykorzystano metodę klasyfikacji jednostek terytorialnych J.W. Webba (1963). Zjawisko depopulacji nasiliło się w gminach wiejskich oraz na obszarach wiejskich w gminach miejsko-wiejskich. Głównym elementem wpływającym na wyludnianie się w tych latach była emigracja ludności. Pogorszenie sytuacji ludnościowej na badanych obszarach związane było również z obniżeniem wskaźnika przyrostu naturalnego. W świetle zmian jakie nastąpiły w badanych latach oraz ich intensywności można uznać, że w najbliższych latach zjawisko depopulacji zacznie się rozwijać z jeszcze większą siłą oraz dynamiką.

Introduction

A current unique challenge with a wide range of impacts on the socio-economic sphere is the phenomenon of depopulation. The depopulation process is a combination of both migration flows and natural population loss caused by low birth rates (Wiśniewski *et al.*, 2020, p. 24; Papadopoulos & Baltas, 2024, p. 1). In depopulated areas, demographic changes such as an ageing population and a reduction in the proportion of young people due to selective migration are taking place. As a result, there is further depopulation of such territory (Wesołowska & Jakubowski, 2018, p. 119).

The phenomenon of depopulation is a challenge for the area in which it occurs, as it generates a number of socio-economic problems (Mickovic *et al.*, 2020, p. 1; Otovescu & Otovescu, 2019, p. 382). It is not limited to a general reduction

in population, but has complex social, economic and cultural implications, with a particularly significant impact on peripheral areas. Peripheral areas are deemed to be places away from economic centres, characterised by relatively low levels of economic development, infrastructure, entrepreneurship, innovation, and the dominance of traditional industries (Strojny & Niewiadomski, 2023, p. 104, 105; Kowalczyk & Nguyễn, 2023, p. 170, 171). In addition, it is indicated that this type of territory shows economic dependence on economic and political centres, as well as low population density and low quality of human capital (Proniewski, 2012, p. 64, 65).

Peripheral areas, due to their specific characteristics, are also termed as a problem areas (Halamska, 2018, p. 70, 71; Balińska, 2016, p. 26). An exemplary characterisation of problem areas was made within the framework of the National Strategy for Regional Development implemented until 2020, in which it was indicated that this type of territory includes, i.a. rural areas with unfavourable socio-economic development indicators and limited development opportunities, border areas, areas where the network of connections with the main voivodeship centres is poorly developed (Proniewski, 2012, p. 68).

Rural areas are defined as areas functionally linked to agriculture and other activities for which the use of natural resources is fundamental. They are used for the pursuit of agricultural production, inland fisheries, forestry (Bielecka, 2020, p. 43; Zawisza & Ptaszyńska, 2020, p. 7), as well as non-agricultural activities such as tourism and other functions to meet ever-changing human needs (Jóźwik, 2019, p. 258; Heffner, 2019, p. 948; Józefowicz *et al.*, 2020, p. 10, 11). Referring therefore to the characteristics of peripheral areas, it should be recognised that rural areas are not their equivalent.

Rural areas in Poland in 2020 covered approximately 92.9% of the country's area. However, it should be pointed out that their share in the structure of voivodeships is not equal. On the basis of the results of a report prepared by the Central Statistical Office (CSO), it can be concluded that in more than half of the voivodeships in Poland rural areas account for between 90.1% and 96% of the area of individual units. In this category the Warmińsko-Mazurskie Voivodeship stands out in comparison to Poland, as rural areas in it cover 97.4% of the territory (Morze (Ed.), 2022, p. 29).

Therefore, considering the significance of the phenomenon of depopulation, its increasing scale and the characteristic significance in areas particularly threatened by it, the aim of the article was to analyse and evaluate the situation of the Warmińsko-Mazurskie Voivodeship in 2012-2022 in terms of the risk of depopulation.

Population Change and the Phenomenon of Depopulation – Theoretical Background

The relationship between population and the economy was analysed by economists as early as about 200 years ago with Malthus's publication of the law of population. According to this theory, population in the absence of constraints grows in geometric progression, and the amount of food produced grows in arithmetic progression (Unat, 2020, p. 133). From this relation, it is clear that the population growth force is infinite and can exceed the land's capacity to provide for it (Danowska-Prokop, 2017, p. 49-53). Consequently, Malthus argues, as a result of a constant supply of land and continuing population growth, there will be a decrease in agricultural productivity (Azam *et al.*, 2020, p. 524). This, in turn, leads to an insufficient supply of food and, as a result, a decrease in population due to co-existing social phenomena (famine, resource wars, disease). In this way, according to a point of view of Malthus, there would be a natural, although rapid, population regulation (Warżała, 2022, p. 82).

An equally important theory in the history of population change research is the classical demographic transition theory. It identifies three phases. The first is characterised by high mortality and uncontrolled birth rates (Okólski, 2003, p. 212-220). In the second, in which the demographic transition takes place, there is a decrease in infant mortality and an increase in life expectancy – the result of scientific progress occurring during this stage. This mainly involved developments in medical science, because, through the use of vaccination and hygiene principles, epidemics were reduced and diseases were learned to be diagnosed more accurately, facilitating the treatment process (Kirk, 1996, p. 362, 363; Okólski, 2003, p. 212-220). In the final phase, the population remains relatively stable, with birth rates and death rates equalizing (Utomo *et al.*, 2022, p. 289).

The theory of the second demographic transition is also an important theory with regard to population variability, considered as a kind of extension of the classical theory of the demographic transition, because the changes it covers are an extension of the classical transition (Kurkiewicz, 2008, p. 107, 108). It describes and also explains the revolution in the lifestyle and sexual behaviour of the population (Yu & Xie, 2022, p. 239). In this case, scientific developments have also played an important role because, i.a. discoveries in the field of contraception have had an impact on the development of fertility (Billari, 2022, p. 20). As a result, the incidence of multi-child family¹ is declining and the average number of children per family is decreasing, while voluntary childlessness is increasing. In addition, the typical age of procreation is further delayed (Janiszewska, 2022, p. 12).

¹ Since the late 1960s in Poland, as in other developed countries, it has been families with three or more children (Janiszewska, 2022, p. 31).

In these theories, which are among the most important in the field of demography, it is possible to see references to the phenomenon of depopulation, but it is not included in a literal way.

The origins of research on depopulation date back to the 19th century, but the very definition of the phenomenon was not as precisely formulated as it is in the current literature. Ogle (1889, p. 205) defined depopulation as an absolute decrease in population in a given area, but did not clearly define the cause responsible for this phenomenon.

An indication of the moment when the issue of depopulation began to be studied in Poland and, at the same time, the elements generating this phenomenon were presented in a manner similar to today's is the interwar period. As Nadobnik (1937, p. 89-96) pointed out, the drivers of the phenomenon in question were 'natural causes, such as a significant weakening of the reproductive force and a possible excess of deaths over births, or social causes, i.e. the resettlement of the rural population to cities and emigration abroad'.

Currently, depopulation is defined as the phenomenon of population decline in an area compared to an earlier period. This situation occurs when the natural increase is negative and exceeds the migration balance, when the migration balance is negative and exceeds the natural increase, or when both phenomena occur simultaneously (Castillo-Rivero *et al.*, 2020, p. 1329; Johnson & Lichter, 2019, p. 1; Pinilla & Sáez, 2017, p. 2; Gómez Valenzuela & Holl, 2024, p. 430; Vuković, 2022, p. 76).

In the Polish literature, the definition of this phenomenon is similar to foreign publications. Namely, depopulation is defined as a situation of demographic and spatial character, denoting a decrease in population in a given period of time as a result of negative natural growth, negative migration balance or the occurrence of both these phenomena simultaneously (Majdzińska, 2018, p. 23; Maleszyk, 2022, p. 68; Hrynkiewicz, 2020, p. 19; Szukalski, 2019a, p. 10; Janiszewska, 2023, p. 55).

Determinants, Impacts and Mitigation of Depopulation

The phenomenon of depopulation in Poland, especially in the last few decades, mainly affects rural areas, but also small and medium-sized cities (Szukalski, 2019b, p. 1). Of the elements generating depopulation, in the context of peripheral areas, population migration is identified as the leading one (Jończy *et al.*, 2020, p. 263). Availability of services, economic conditions and community facilities are also identified as factors influencing rural depopulation² (Alamá-Sabater *et al.*, 2019, p. 101). These elements include, for example, the existence of differences in the level of education or the quality of healthcare available in rural areas

²Social care centres, retirement homes, primary and secondary schools, hospital availability.

compared to urban areas (Dahs *et al.*, 2021, p. 535). Another example of the predominance of cities over rural areas in the context of the depopulation phenomenon is the difference in earnings. In rural areas, the achievable income is relatively lower. Another example of the advantage of cities over rural areas is the mismatch between the qualifications of people living in rural areas and the jobs available – this applies in particular to people specialised in providing services or prepared to work in industry (Pinilla & Sáez, 2021, p. 336).

As a result of population decline in rural areas, there is a deterioration of the biological structure in terms of sex ratio as well as age (Śleszyński, 2016, p. 63). In some municipalities (e.g. in the Podlaskie Voivodeship), the gender ratio from the perspective of the depopulation phenomenon is unfavourable, as there are approximately 80 or fewer women for every 100 men aged 20-34. Thus, the conditions for starting a family and, consequently, the potential opportunity to increase the fertility rate are reduced (Śleszyński, 2023, p. 142). The reason for this is the spatial movement of the population, that is migration, which mainly involves people from the age group indicated earlier, i.e. the population in the 25-35 age range (Organiściak-Krzykowska, 2022, p. 61). In addition, the disproportion in the number of women in relation to the number of men is also due to the fact, that women are much more likely to choose secondary and tertiary education and do not want to remain on farms, which is very often associated with their migration (Szukalski, 2020, p. 2).

Women's decisions to leave are also influenced by their greater willingness to respond to deteriorating social infrastructure such as kindergartens or crèches, as well as transport infrastructure (transport connections) (Jończy, 2023, p. 59). Therefore, the mismatch between labour supply and demand in the context of depopulation is important because it causes selective migration. This demonstrates the importance of generating employment in the countryside outside the agricultural sector, which to some extent can stop population movement in both the short and long term (Stanny *et al.*, 2023, p. 223).

An equally important factor from the perspective of population decline in rural areas is the demographic situation prevailing in these areas, which can be reflected in the birth rate, that is, the ratio of live births to deaths (Mikulec, 2023, p. 15). In recent years, there has been a systematic decline in the number of births as a result of changes in the age structure of the population and the evolution of procreative behaviour (Cierpień-Wolan, 2020, p. 144). At the same time, disregarding the atypical period of the pandemic caused by SARS-CoV-2, the number of deaths was recorded with similar year-on-year values in previous years (Szukalski, 2021, p. 2). Thus, with regard to the substrates of the birth rate, it can be seen that the relationship that has been formed in this way in recent years has been unfavourable in the context of depopulation.

One of the factors generating the decline in fertility rates is the shifting age limit at which young people decide to have children (Pastuszka, 2019, p. 255). This can be seen by analysing the age of women giving birth to their first child.

In 1990, the value was about 26 years old, while about a quarter of a century later it was 30 years old (Marciniak & Stańczak, 2019, p. 50). Reasons for this are, among others, the desire for economic stability to provide for the family in the first place or for these people to achieve the desired level of education (Bieńkowska & Kitlińska-Król, 2017, p. 43).

In terms of the factors influencing people's migration decisions, some similarities can be noted with regard to the factors determining the attractiveness of a region. In the case of migration, as in the case of the investment climate, the sufficient presence of 'hard' factors (e.g. location, state of the natural environment, transport accessibility, social infrastructure shaping living conditions) and 'soft' factors (e.g. accessibility of educational and medical services, sense of identification of the local population with the city or region, efficient local administration, housing benefits) are important (Sass, 2020, p. 50; Kryk, 2019, p. 82; Sikorska-Wolak *et al.*, 2020, p. 174, 175). An insufficient level of development of these elements in an area may result not only in a lack of interest among investors, but may also be a factor stimulating in such a place the desire to emigrate among its inhabitants.

In addition to the primary effect of depopulation, which is a decrease in the population of an area, there are also accompanying consequences resulting from the exodus of inhabitants. These include the economic stagnation of the area with a deterioration of interpersonal relations, a reduction in biodiversity or a loss of the natural values of the territory (Caceres-Feria *et al.*, 2021, p. 108). Causes of depopulation also include unfavourable changes in the age and gender structure of the population (Camarero & Oliva, 2019, p. 3), which can cause difficulties for individual families or entire communities, for example by making it difficult to fulfil caring functions for the elderly (Seberini *et al.*, 2021, p. 319).

When analysing the effects of the phenomenon described, there are some similarities with its causes.. Young people, due to the lack of suitable work, seek employment outside the depopulation area. This reduces the tax base in these areas, which in turn translates into a reduction in social infrastructure (Kolosov & Crivenco, 2021, p. 264). Due to the outflow of labour, the interest of potential investors in the area is declining, so the labour market situation is not likely to improve, so there are renewed emigration aspirations among residents (Daugirdas & Pociūtė-Sereikienė, 2018, p. 16, 17).

Population decline also adversely affects the local market for goods and services, including the property market (falling prices due to low demand), inefficiencies in the public finance system at local level and the accompanying increase in infrastructure maintenance costs (Wojewódzka-Wiewiórska, 2021, p. 159; Serra *et al.*, 2023, p. 3066, 3067). Yet another problem resulting from the depopulation of an area is the increasingly dispersed and inefficient settlement, the growing mismatch between jobs and education (Śleszyński, 2018, p. 229).

As a result of depopulation, municipal revenues from personal taxes are also declining – which can make it difficult for such entities to operate

(Szweda-Lewandowska, 2020, p. 16). A long-term negative total migration balance, which is one of the elements significantly influencing the depopulation of a given area, results, i.a. in the loss of prestige of a place as, e.g. an academic centre where this phenomenon occurs, in relation to other areas. As a result, the number of students, graduates and the volume of R&D expenditures, among others, decreases. This in turn generates undesirable phenomena e.g. in medical care. As a result of the resulting population outflow, the number of doctors and medical staff is decreasing. As a result, the number of people in this group becomes insufficient in relation to the existing demand in an area experiencing a long-term negative overall migration balance (Heffner, 2023, p. 78).

A declining population also affects consumer demand (Bock & Haartsen, 2021, p. 38) and the propensity for investment by economic operators struggling to sell their goods and services. As a result, there is a shrinkage of the economic potential of such a territory, which again results in a decrease in the income of local government units (Wyszkowska & Wyszkowski, 2023, p. 30). This creates a kind of 'spiral' dynamising already existing negative trends resulting from the depopulation of a place (Kovács & Tagai, 2021, p. 420, 421; Lorente *et al.*, 2020, p. 152, 153). Finding a solution to such a situation is not an easy task (Reynaud & Miccoli, 2018, p. 1-12). It is therefore important to properly analyse the various factors that can create this phenomenon, as an accurate diagnosis is a real chance to find the most appropriate solutions to the challenge of depopulation (Hryniewicz, 2020, p. 20, 21).

The problem of the successive decrease of population in rural areas does not only concern Poland – it is also a challenge in many countries of the European Union (Eurostat, 2023), i.a.: Portugal (Fernandes, 2019; Almeida, 2020), Spain (Pose *et al.*, 2020; Cañal-Fernández & Álvarez, 2022; Rodríguez-Rodríguez & Larrubia Vargas, 2022; Pleite & Sueiras, 2024), Romania (Muntele *et al.*, 2021; Hărăguș & Földes, 2020; Otovescu & Otovescu, 2019), Lithuania (Verkulevičiūtė-Kriukienė *et al.*, 2021), Greece (Panagiotopoulos & Kaliampakos, 2024), Italy (Reynaud & Miccoli, 2023; Basile & Cavallo, 2020) or Bulgaria (Velkovski, 2022; Beluhova-Uzunova & Hristov, 2020).

Ways to prevent further depopulation are different, because the factors causing depopulation are not always related to the same problems. Examples of preventing depopulation include developing local entrepreneurship by, for example, supporting young people to set up businesses, offering them internship and apprenticeship programmes and implementing support programmes for jobseekers (Piotrowski *et al.*, 2019, p. 26-46). Other ways of stopping depopulation are the development of mobility and communication infrastructure, the development of digital infrastructure and agriculture, as well as the improvement of social services. To combat depopulation, measures are also being taken to make the most of the region's natural assets for the benefit of tourism, to provide incentives for the creation of renewable energy sources (Cambrá-Fierro & Pérez, 2022, p. 876-881; Stojanova *et al.*, 2021, p. 16, 17).

Examples of proposals for solutions to the problem of depopulation that can be found in the literature include taking measures to give an economic boost to depopulated areas. In the context of rural areas, the development of agricultural land on the basis of sustainable agriculture is one important element that could counter depopulation. Financial resources invested in this way would make it possible to stop further degradation of soils, which in turn would cease to discourage the farming population from emigrating from such areas (Jato-Espino & Mayor-Vitoria, 2023, p. 11). However, as demonstrated earlier, measures to reduce depopulation should not be limited to interventions in the agricultural sector only. To this end, it is recommended that social economy institutions play a greater role in which they support the creation of enterprises in different sectors, thus increasing the diversity of the labour market in such an area (Carchano *et al.*, 2021, p. 14). Another example of intervention in the non-agricultural sector that can reduce depopulation is subsidising companies that employ local youth. In this way, the exodus of the most valuable population from the point of view of depopulation is inhibited, so there is a chance of avoiding a decline in the attractiveness of such an area and, in addition, such people can obtain a satisfactory salary where they live (Labianca & Navarro Valverde, 2019, p. 235, 236).

In addition to creating opportunities for greater employment and building wage competitiveness, the availability of social infrastructure is also important. It is recommended to improve conditions from the field of transportation and information and communication technologies. In this way, functioning in such an area becomes more comfortable than before, which may result in the retention of some residents in such an area (Alamá-Sabater *et al.*, 2021, p. 5-10). The above examples mainly contained recommendations dedicated to rural areas in Spain. They can be applied in other countries, but as mentioned earlier – it is important to carefully analyse the conditions of depopulation in the territory where such measures would be applied, because the above solutions may not fit at all the real problems of another territory.

Description of Research Methodology

The article assesses the scale of the depopulation threat occurring in rural areas. Due to the availability of data, the analysis covered rural municipalities and rural areas included in urban-rural municipalities. A detailed analysis and evaluation of the phenomenon of depopulation in rural areas of the Warmińsko-Mazurskie Voivodeship was preceded by a diagnosis of the problem in the interregional system in Poland. For this purpose, differences in the number of inhabitants in the rural areas of municipalities in various voivodeships in Poland in 2012 in relation to 2022 were estimated.

Taking into account the population growth and the balance of migration, the classification and evaluation of the population situation in rural areas of municipalities of Warmia and Mazury Voivodeship according to the typology of J.W. Webb (1963). This is a method commonly used to divide individual territorial units at the national and international level (Lizińska, 2022, p. 74; Gil *et al.*, 2020, p. 122; Hubl, 2019, p. 96; Prenzel, 2017, p. 41).

This typology distinguishes the division of individual territorial units into classes labelled A to H. The first four types A-D refer to units of positive character from the perspective of population change – they achieve population growth, while the remaining types E-H cover areas of negative character – there is a decrease in population. The exact description of the individual cases occurring in the adopted methodology is as follows (Webb, 1963, p. 132):

- positive types (population growth):
 - A – positive birth rate exceeds negative migration balance,
 - B – positive natural increase is higher than positive migration balance,
 - C – positive birth rate is lower than positive migration balance,
 - D – positive migration balance more than compensates for the negative birth rate;
- regressive types (population decline):
 - E – the negative birth rate is not compensated for by a positive balance of migration,
 - F – the decline in population is caused more by negative natural increase than negative migration balance,
 - G – the decline in population is caused more by negative migration migration than negative natural increase,
 - H – the negative migration balance is not compensated for by a positive birth rate.

The analyses carried out, both with regard to the values of the natural increase rate per 1,000 population, the state of the population and the migration balance rate per 1,000 population, used data from the Local Data Bank (LBD) published by the CSO (Central Statistical Office).

In the context of total migration in Poland itself, it should also be emphasised that the data provided by the CSO may result in an underestimation of the actual population living in a given area. Such disproportions may fluctuate in relation to the real value with a difference of even approximately 20-30% (Jończy *et al.*, 2021, p. 45-51). As a result, the actual situation in relation to the theoretical one regarding the depopulation situation in a given area may be considerably worse than can be presumed (Jończy, 2023, p. 56).

Assessment of the Scale of the Threat of Depopulation in Rural Areas

According to the conducted analyses, rural areas of municipalities in Warmia and Mazury voivodeship in the analysed years were characterised by a high level of depopulation in comparison to the rest of the country. Among all voivodeships, only four were characterised by a higher share of depopulating municipalities. These were: Opolskie, Podlaskie, Świętokrzyskie and Lubelskie. All the units mentioned were characterised by a depopulation level higher by at least 5 percentage points (Fig. 1).

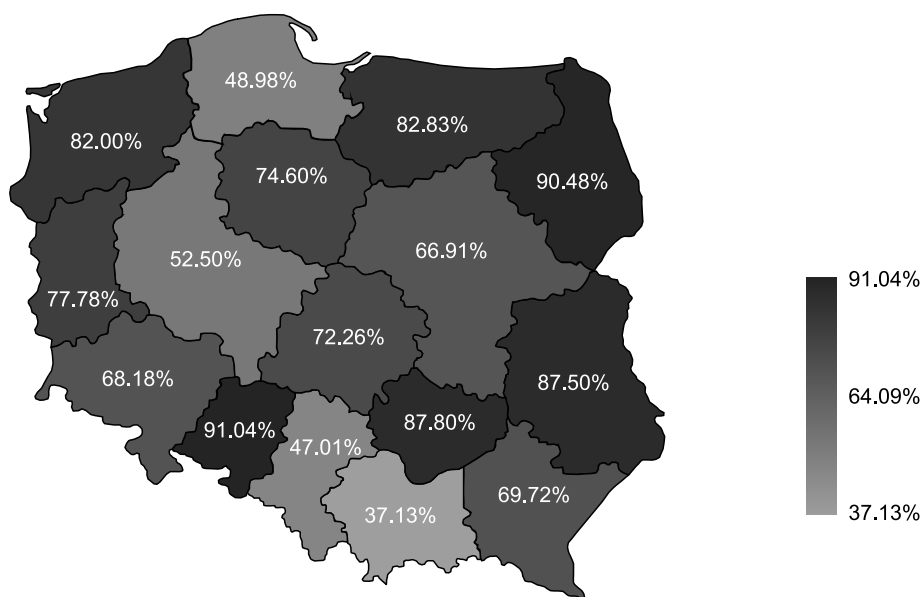


Fig. 1. Share of municipalities covering rural areas with reduced population in relation to municipalities covering rural areas in general 2012-2022

Source: own elaboration based on data published by LBD (for years 2012-2022).

The Opolskie Voivodeship was characterised by the highest share of rural areas of municipalities with depopulation in relation to the total number of municipalities. The specificity of Opolskie Voivodeship in terms of depopulation is conditioned, i.a. by its history, and the leading factor in the depopulation of this territory is migration. Due to the opportunities available to some residents of the Opolskie Voivodeship, since the 1980s they have been migrating abroad for work purposes (Jończy & Łukaniszyn-Domaszewska, 2018; Goleński & Blajda, 2021, p. 121-123). In recent years, however, internal migration has been more important from the perspective of depopulation. The population is choosing to leave the

Opolskie Voivodeship for other areas of Poland because of the relatively more attractive labour market (Kuźmicka, 2023, p. 51) and educational offer (Jończy & Rokita-Poskart, 2014, p. 9-11).

The occurrence of large interregional variation (from 37.13% – in the Małopolskie Voivodeship, to 91.04% – in the Opolskie Voivodeship) of the share of rural municipalities with a reduced population in relation to the total rural areas indicates the need for an in-depth diagnosis of the components of this phenomenon. A detailed analysis of changes in the population situation in the Warmia and Mazury voivodeship was made using Webb's typology (Tab. 1).

Table 1

Population situation in rural areas of municipalities of the Warmia and Mazury voivodeship in 2012 by Webb typology

Population situation type	Nature of the type	Number of municipalities of rural areas units	Share [%]
A	positive	7	31
B		7	
C		17	
D		0	
E	regressive	3	69
F		6	
G		16	
H		43	

Source: own elaboration based on data published by LBD (for 2012 year).

As can be seen from the summary presented in Table 1, rural areas in municipalities of Warmia and Mazury voivodeship in 2012 according to Webb's classification were mainly characterised by regressive type (E-H) of population situation (almost 70% of municipalities). From the point of view of the studied region, this is an unfavourable situation, as it indicates a decrease in population. In this case, in the context of the whole province, the factor mainly responsible for the decrease in population was the phenomenon of migration. Due to the fact that a significant part of the rural areas achieved a positive natural increase, it might seem that from the perspective of depopulation the situation of the study area is not bad. However, in reality, the opposite is true. Of all the rural municipalities and rural areas in urban-rural municipalities characterised by a positive natural increase, more than half represented type H in the method used. This means that the natural increase was not able to neutralise the population loss caused by the migration phenomenon. In addition, a negative aspect from the point of view of depopulation risk is the fact, that only 24 municipalities

included in the study were characterised by both positive natural increase and migration balance.

Analysing population changes in rural areas of municipalities in the Warmia and Mazury voivodeship in the same way a decade later, i.e. in 2022, a significant deterioration in the population situation can be observed (Tab. 2). Indeed, while in 2012 there was a positive population growth in 74 studied municipalities (in types: A, B, C, H), 10 years later the situation changed significantly (4 C – type municipalities). On the other hand, taking into account Webb's classification, it should be pointed out that only 22 units represented, from the perspective of depopulation, a positive group, namely type C – denoting a lower (although still added) natural increase in relation to the positive migration balance, and type D – denoting the compensation of the negative natural increase with a positive migration balance. The increase in the already unfavourable relationship in terms of population situation in 2022 of the number of surveyed areas with a positive character in relation to the surveyed areas with a negative character, compared to 2012, indicates an intensification of the depopulation phenomenon.

Table 2

Population situation in rural areas of municipalities of the Warmia and Mazury voivodeship in 2022 by Webb typology

Population situation type	Nature of the type	Number of municipalities of rural areas units	Share [%]
A	positive	0	22
B		0	
C		4	
D		18	
E	regressive	11	78
F		36	
G		30	
H		0	

Source: own elaboration based on data published by LBD (for 2022 year).

Further analysis of the rural areas of the studied municipalities of the Warmia and Mazury voivodeship shows that the dominant ones, constituting $\frac{2}{3}$ of the studied areas in terms of population situation, were those classified as type F and type G – i.e. areas with a predominance of deaths over births and a predominance of emigration over immigration.

Due to the increase in the number of municipalities with a negative real birth rate in 2022 compared to 2012, it must be concluded that the phenomenon of depopulation has intensified. In order to better illustrate the process of change that took place in the analysed time period, in table 3 shows the changes in the

population situation of individual units. Comparing 2012 and 2022 in this way, it can be concluded that the negative trend in the population situation has not been completely reversed in almost any of the study areas. Moreover, the number of municipalities included in the analysis characterised by both positive natural increase and positive migration balance decreased from 24 in 2012 to 4 in 2022.

From a depopulation perspective, the situation improved significantly in only one municipality. The migration balance in this territory in 2022, compared to 2012, has reversed – it was previously negative and is currently positive, and the natural increase has been maintained at a positive level (which is due to the achieved unit type according to Webb's classification, namely the studied area has been classified as type C). An improvement in the depopulation situation has also been achieved in the 8 other study areas, as according to the typology used, the migration balance has improved in these areas (from negative values in 2012 to positive values in 2022).

Table 3

Changes in the population situation in rural areas of municipalities in the Warmia and Mazury voivodeship by Webb typology in the years 2012-2022

Specification		Types of unit in 2012								Σ of types in 2012
		A	B	C	D	E	F	G	H	
Types of unit in 2022	A	0	0	1	0	1	3	2	0	7
	B	0	0	0	4	0	2	1	0	7
	C	0	0	2	10	0	3	2	0	17
	D	0	0	0	0	0	0	0	0	0
	E	0	0	0	0	1	1	1	0	3
	F	0	0	0	0	3	1	2	0	6
	G	0	0	0	0	1	9	6	0	16
	H	0	0	1	4	5	17	16	0	43
Σ of types in 2022		0	0	4	18	11	36	30	0	–

Source: own elaboration.

However, it is important to note that the changes that have occurred in these cases (i.e: 3 municipalities classified as type F in 2012 – qualify as type E in 2022, 1 municipality changes type from G to E and 4 municipalities change type from H to D), means that there is still a negative natural increase in their area (as shown by the characteristics of the different types according to the method used).

It should also be noted that the 8 municipalities included in the study, which were previously characterised by a positive real population growth, achieved a negative real population growth in 2022. From the point of view of depopulation,

this is important information, as it turns out that the studied areas, which in 2012 were characterised by a favourable demographic situation (they had both a positive natural increase and migration balance), 10 years later became places with a completely different population situation. The occurrence of such a situation is important not only from the point of view of the need to diagnose changes in the direction and intensity of processes generating unfavourable population situation in a given area, but also in the context of potential actions that can be taken to reduce the indicated trends. At the same time, it should be emphasised that such a dramatic change in the case of the examined areas with positive real population growth took place over a period of 10 years, which indicates relatively fast progressing negative demographic processes. Thus, possible measures in response to depopulation should be taken with an awareness of the level of their effectiveness over a specific period of time.

As emphasised by other authors, the elements that can be identified as key in the context of the depopulation of the Warmia and Mazury voivodeship are historical conditions (a large share of state-owned farms in the past with the dominant agricultural function of the voivodeship at the same time) (Hryniewicz, 2022, p. 47-49), or the low share in the functional structure of such functions as tourism and leisure, industrial, residential, services (Gwiaździńska-Goraj, 2018, p. 340-342).

As a result, the existing low housing availability as well as the unattractive labour market are becoming a factor causing migration of the population (Lisowska & Łojko, 2023, p. 73). This is confirmed by the results of research, as in the years covered by the analysis, the decrease in population was significantly influenced by the negative migration balance. The problem in this voivodeship is the lack of significant changes in the context of, i.a. the diversity of the labour market, improvement of social infrastructure or competitive wage levels in relation to other parts of Poland (Szaltys, 2017, p. 104, 105; Wyrwa & Barska, 2021, p. 54-72). As a consequence a significant part of the population's migration flows is directed towards the neighbouring voivodeships, i.e. Pomeranian Voivodeship and Masovian Voivodeship (Strojny, 2013, p. 233-235; Rozkut (Ed.), 2023, p. 418, 419). These areas are relatively better developed economically in relation to Warmia and Mazury voivodeship. This, in turn, makes the opportunities related to the previously mentioned areas, such as wage levels, more favourable in these voivodeships in relation to the Warmia and Mazury voivodeship (Guzik *et al.*, 2021, p. 114-118). This, in turn, may be a factor in the willingness of residents to emigrate from rural areas of the Warmia and Mazury voivodeship.

Summary and Conclusions

The analysis has shown that rural areas of the Warmia and Mazury voivodeship are characterised by the problem of depopulation. The importance of this problem also stems from the fact that the voivodeship has the largest share of rural areas in relation to its area.

The analysis and evaluation of the population situation in rural areas in the analysed voivodeship indicated the occurrence of an increasing trend of population loss, mainly due to a negative migration balance. The positive natural increase recorded in 2012 did not compensate for the negative migration balance, while in 2022 the negative natural increase was accompanied by a negative migration balance. Therefore, a regressive type of demographic situation prevails in the rural areas of the municipalities of the Warmia and Mazury voivodeship (type H in 2012 and type F together with type G in 2022 – dual regressive types).

In addition, Warmia and Mazury voivodeship in the analysed years belonged to the group of 5 voivodeships characterised by the largest decrease in population in rural areas. Taking into account the fact that in the same period of time the factors determining the phenomenon of depopulation clearly increased, it should be stated that the rural areas of the analysed region are to a high degree threatened by the indicated problem along with the coexisting negative consequences of a diverse nature. It is therefore necessary to precisely define the type, direction and scale of changes in demographic processes in this area and their determinants in order to adjust the policy aimed at counteracting the changes in the population situation as effectively as possible.

From the point of view of the characteristics of the phenomenon in question, its occurrence poses a major challenge for local authorities. The increasing scale of complexity and difficulty in solving emerging problems is a result of progressing depopulation. As a consequence, depopulation is becoming an important element requiring special attention in the context of the socio-economic development of the region and the limited scope and level of effectiveness of measures taken to reduce this phenomenon. Taking into account the fact that depopulation is primarily associated with the phenomenon of migration, the main attention of authorities at the local level should be directed at creating conditions that will be conducive to reducing the scale of migration and the return of residents. On the one hand, rural areas provide an opportunity to create friendly conditions for living, especially in the environmental context. However, it should be taken into account that the current expectations of rural residents in terms of conditions are increasingly similar to those in urban areas. In addition, rural areas can be a place for seasonal living, which can promote the development of existing infrastructure.

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METHODS OF MANIPULATION USED IN ADVERTISING

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Abstract

The aim of this study was to see how selected methods of manipulation used in advertising affect consumer behaviour. The study was conducted using a diagnostic survey using an original questionnaire posted on social media. The participants included 102 selected individuals. According to the information gathered, the respondents are aware that the use of manipulation is widespread in advertising. The most common methods of achieving this include fragmenting the advertising message and leveraging the authority or popularity of individuals featured in advertisements. Fragmentation has a particularly strong effect. Others of similar importance include making the message appear scientific, idealising it, and influencing human emotions. Manipulation in advertisements often leads to situations when consumers decide to purchase products that they do not, in fact, need. Manipulative tactics, such as creating artificial needs, using psychological tricks, or applying social pressure, can significantly influence consumer decision-making, often resulting in the purchase of products that provide no genuine benefit or satisfaction.

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Słowa kluczowe: manipulacja, reklama.

Abstrakt

Celem badań było zweryfikowanie, jak wybrane środki manipulacji stosowane w reklamie oddziałują na postępowanie konsumentów. Badanie przeprowadzono metodą sondażu diagnostycznego z wykorzystaniem autorskiego kwestionariusza ankiety, który zamieszczono na kilku portalach społecznościowych. Uczestniczyły w nich 102 celowo wybrane osoby. Z zebranych informacji wynika, że respondenci są świadomi tego, że manipulacja jest powszechnie stosowana w reklamie. Do najczęściej spotykanych przez nich form tego rodzaju działań należy zaliczyć fragmentację przekazu reklamowego oraz wykorzystywanie autorytetu lub popularności osób występujących w reklamie. Pierwszy z wymienionych środków wywiera na nich relatywnie silny wpływ. Do innych o podobnym znaczeniu zaliczono: stwarzanie pozorów naukowości, idealizację oraz oddziaływanie na ludzkie emocje. Manipulacja w reklamie często prowadzi do sytuacji, w których konsumenci decydują się na zakup produktów, które w rzeczywistości nie są im potrzebne. Mechanizmy manipulacyjne, takie jak tworzenie sztucznych potrzeb, wykorzystywanie psychologicznych trików czy tworzenie presji społecznej, skutecznie wpływają na wybory konsumenckie. W rezultacie często są nabywane przedmioty, których zakup nie przynosi konsumentom rzeczywistej satysfakcji ani korzyści.

Introduction

“Manipulation involves using information with a view to achieving a hidden goal by the information provider by consciously distorting the image of reality, which limits the possibility of rational evaluation and reflective response from the recipient, affects his attitude in a concealed manner and makes him dependent to a certain extent” (Szulczewski, 1982, p. 52). This definition defines manipulation as a specific method for influencing other people. Its mechanism is hidden from individuals who are treated in this way. It has two main features, i.e. indirect effect on consciousness and the fact that the aim and intention of exerting an impact, which brings benefit to the manipulator, is often concealed from the individuals being manipulated, which suggest that it is not beneficial to them (which is usually true). In other words, manipulation involves controlling someone else’s behaviour in a purposeful and planned manner, which is not

consciously perceived as such by a person being manipulated. The effectiveness of manipulation depends on its imperceptibility (Lepa, 1992, p. 77-87).

There are two types of manipulation: direct (e.g. “brainwashing”) and indirect, based on verbal and nonverbal communication. This form can be effected on two planes: conveying information and emotions. Regarding the former, manipulation involves providing false information in a purposeful and concealed manner, hiding certain facts and emphasising others. It occurs when a person or a group of people is misled and forced to accept a false image of reality. Manipulation, on the other plane, involves evoking specific emotional states and persuasion. In both cases, one uses psychological knowledge, such as psychoanalysis or psychology of motivation (Harwas-Napierała, 2005, p. 247-258).

Manipulation occurs when two conditions are fulfilled. The first condition involves intentional and conscious actions performed by the person exerting influence on others, while the person under such influence does not realise it. In the second condition, the person exerting influence acts in their own interest without considering the interest of the person on whom the influence is exerted (Antosik, 2014, p. 40; Konieczny, 2023, p. 156; Łukaszewski *et al.*, 2009, p. 51).

Rules of Social Influence Used in Advertising

Persuasion, convincing, and recommending are all forms of influencing that are used both in politics and marketing but also in practically all interpersonal relations. Advertising is ubiquitous in our reality – it is difficult to imagine a world without commercials. Every day, consumers are exposed to various marketing techniques. They can be immune to a range of them, but they can be influenced to a various extent by others. Robert Cialdini analysed the effectiveness of influencing people in his studies. In his flagship publication entitled “Influencing people. Theory and practice”, he mentions techniques classified into six groups, determined as “Cialdini’s six rules”. These include:

- rule of reciprocity – it involves invoking a feeling of obligation and gratefulness in another person. It points to the fact that one should always do something in return for what one receives from another person; it obligates one to return the favour, and it is often used in negotiations and in everyday life; it is based on a conviction that if one does something nice to another person, it evokes a natural will to reciprocate (Debczyńska & Rollnik-Sadowska, 2021, p. 10);

- rule of involvement and consequence – this is based on the assumption that if one gets involved in a case or one makes a declaration to purchase an item, one will continue, as it will be difficult to withdraw because one will want to “keep face” and be perceived as a person of one’s word (Skorupka, 2023, p. 263);

- rule of social proof of right – according to it, many decisions are often based on what others think and on how they behave; it is associated with the need

to belong to a group and to succumb to the social norms; popular marketing actions in this regard include seeking reviews and recommendations from influencers who can influence other people's decisions (Liber-Kwiecińska, 2023);

– rule of liking someone – according to this rule, whether something is right or not is decided by referring to what other people think about it; it is based on the fact that one does not refuse someone who asks for the sake of friendship or sympathy for something that one does not want to do; it also illustrates the will to be sympathetic towards people who are like us with respect to their appearance or beliefs and opinions;

– the rule of authority – this stems from the fact that it is easier to believe in someone's claims than to formulate rational opinions on them, and if we accept someone's opinions, it is easier to accept them from known and respected authorities; we follow suggestions of people who can be perceived as authorities or who think themselves to be ones; an authority is distinguished by a social position, material status, a scientific title or specialisation in a specific area;

– the rule of inaccessibility – this stems from a limited opportunity for obtaining something that generates emotions associated with being limited by possibilities; such emotions can be unpleasant and thus necessitate quick decisions driven by such emotions; it is easier to persuade a customer to buy an item which is in a limited offer or which is available only for a short time; consumers want what is hard to get, mysterious, or temporarily unavailable.

Apart from the above, there is a rule of maximisation of one's interest, according to which everyone tries to get as much as possible for the lowest possible price. All these rules use automatism in human actions, which makes them effective. Nowadays, we are flooded by information and, in consequence, we have to respond fast and select news. To this end, we often use heuristics, intuition, habits and stereotypical thinking. We often take into consideration one aspect of a situation when making a decision, which often leads to wrong choices. The world of advertising uses this tendency to manipulate buyers' decisions with the above-mentioned rules of social influence (Kliś, 2010, p. 26, 27; Antosik, 2014, p. 41-43; Rychlewicz, 2023).

Types of Manipulation Methods in Advertising

The informative value of an advertisement is one of the key issues in the functioning of the market and influencing buyer behaviour. Advertisements can often be perceived as a tool of manipulation, which makes use of peoples' inclinations, weaknesses and needs in order to achieve the sales goals. Although it is a widely applied method of passing on information, it is often one-sided and irrevocable. The message conveyed in it is often simplified, abbreviated and formulated in such a way as to evoke a specific response in the recipients.

On the one hand, the main aim of an advertisement is to provide information about products and services, but it can also encourage people to buy them. Persuasion is, on principle, a tool for influencing a recipient, which consists of informing in a subtle yet clear manner about the necessity to make a choice which is the right one in given circumstances. Therefore, it consists of encouraging and persuading the advertiser to accept the advertiser's arguments by trying systematically to influence someone else's thoughts, feelings, and actions through conveyed instruments. The message in advertisements is, therefore, persuasive rather than just informative in nature. Its aim is to provide information, but not only that – it is mainly to influence the buyers' behaviour, to persuade them to make a purchase or to change their attitude to the offer addressed to them (material or non-material). Since the aim of advertising is to persuade people to act in a certain way, its informative value has been questioned increasingly often. Persuasion, i.e. influencing the recipient with the message, is a key advertisement tool. By systematic attempts at influencing the person's thoughts, feelings and actions, an advertisement is supposed to persuade the recipient to make a specific choice which meets the advertiser's expectations. Therefore, advertising messages, which are intended to persuade people to act in a specific manner, are instruments of persuasion. Unfortunately, their credibility is highly doubtful. Because of this, they often become tools of manipulation in the hands of advertisers (Nowacki, 2009, p. 339-348).

The effectiveness of advertisements depends on many factors. The key to success is that they should be based on facts and reliable information. However, with the competitive pressure on the market and businesses striving to achieve the highest sales, many advertisers use various manipulation techniques. Advertisement authors often use various measures of manipulation, which are intended to help them achieve the desired results. The most commonly used include: fragmentation, use of evaluative words, use of structures that prevent negation, making the message appear scientific, implicature, presupposition, use of an authority and/or popularity of a person appearing in an advertisement, hyperbolisation, idealisation, influencing people's emotions.

Fragmentation, addressing the message to a small group of recipients in the advertisement, divides the market into smaller but more homogeneous groups of consumers, called market segments. It is an important element of media planning as it helps reach a selected consumer group with a specific advertising message. Selected market segments to which advertisements are addressed have similar needs, preferences, purchasing behaviours and lifestyles. This allows for the message to suit the needs and preferences of individual consumer groups, increasing its effectiveness and improving the efficiency of advertising budget use, eliminating wasting resources intended for the purpose (Belch & Belch, 2014, p. 410-440).

Using evaluative words as one of the most common linguistic manipulation techniques applied in advertising consists of introducing such words into the

advertising text that evoke emotions and valuation instead of describing the object being advertised objectively. Frequently used words include: “best”, “unique”, “perfect”, “ideal”, and “extraordinary”. The aim is to evoke positive emotions and persuade people to act, provoke a reaction – a purchase. These evaluative words are also popular because they help convince consumers that a product or service is unique, that is, the best on the market. This mechanism is also used to build a positive brand image, persuade consumers to buy things, and build loyalty in buyers or consumers towards the goods on offer or a company (Piecychna, 2020, p. 106-108).

The use of structures that prevent negation is a method of manipulation that involves formulating the advertising message in such a way as to make its negation difficult or even impossible. Frequent forms include the use of complex sentences, especially conditional phrases, which exclude the possibility of negation. For example, instead of saying, “Our product is not expensive”, it is better to say, “If you are looking for a product at a good price, our product will be good for you”. The message is formulated in this manner to provide positive information about the offer while minimising the possibility of negative comments or objections (Belch & Belch, 2014, p. 543-560).

Making a message appear scientific is an equally frequently used method of manipulation. The aim of this is to present an offer in a positive light. Examples of such actions include using scientific research to justify claims about the effectiveness or safety of products. In fact, such research is often conducted by hired scientists, which may affect its impartiality. Moreover, the findings of such research are often presented selectively and are not representative of the whole population. The use of scientific or technical language in advertisements is another technique. This is to make an impression that the manufacturing process for the products being advertised is based on advanced technologies and scientific knowledge (Hrycaj, 2007, p. 415-417).

Implicature and presupposition are the two main linguistic instruments used in advertising to influence consumers. Implicature is a method for conveying the meaning of something by implication rather than by an expression itself. This means that an advertisement can contain suggestions or hints which are not expressed directly, but allow for inferring some information or meaning. For example, an advertisement for a car can contain the phrase: “Your family deserves the best car”, which implies that the car being advertised is the best choice for the family. On the other hand, presupposition is an assumption which is accepted as true or irrefutable. Presuppositions are often used in advertisements to stress the advantages of a product or a service. For example, an advertisement for a new car contains the phrase: “Now with a new engine”, which implies that the car is popular and well-known to the consumers, and the engine is its only new element. In this manner, the advertiser conveys the message that the product is well-known, has a good opinion among consumers, and a modification (a new

engine) increases its value, which makes it an even better option compared to competitive offers (Bralczyk, 1995, p. 204-209).

Hiring well-known individuals is popular in advertising. This aims to boost the consumers' interest and trust in the brand or product. Athletes, scientists, celebrities and other famous individuals can positively affect the brand or product perception, attracting attention and increasing the will to buy. The authority of such individuals is built on their image, experience, popularity and specialist knowledge, which can translate into a positive image of the products with which they will be associated.

Hyperbolisation and idealisation are the next two manipulation methods used quite often in advertisements. Hyperbolisation involves exaggerating the product features or its functionality to reinforce its positive image and to persuade potential customers to buy it. According to P. H. Lewiński, "advertisers' propensity to hyperbolise, to exaggerate, is visible everywhere, especially in the choice of evaluative epithets. It is not enough that products are good or even very good – they are ideal or perfect" (Lewiński, 1999, p. 172). Idealisation involves presenting a product that overrates its advantages and minimises its disadvantages. In an idealising advertisement, a product is usually presented in an ideal situation, where its use brings spectacular effects. These kinds of manipulation can mislead the consumer with respect to the actual product features, but they can also act on an emotional level, encouraging the customer to bind up to the brand in a positive and emotional manner (Michalska, 2014, p. 281-285).

Influencing human emotions is one of the key aspects of advertising, and its aim is to evoke positive emotional reactions in consumers to the products or services being advertised. The catalogue, in this regard, includes several methods of influencing consumers' emotions. One of them is the use of sounds, music, images or scenes that are supposed to evoke specific emotions, such as joy, sadness, anxiety or frustration. The background music is intended to build associations with specific emotions; e.g. joyful and energetic music will be used in an advertisement for energy drinks, whereas peaceful and relaxing music will be used in body care cosmetics. There is also a possibility of using "an emotional scenario". This boils down to building a history or a situation, which evokes specific emotions in consumers and provokes a response – making a purchase. For example, an advertisement for coffee can present a romantic situation, which evokes the feeling of love and desire in consumers, and, at the same time, it will persuade them to purchase the brand on offer. A suitable narrative is a relatively often used instrument. Advertisements often tell a story or present scenes that are easy to understand and remember and also evoke specific emotions in consumers. The narrative can concern various aspects of life, such as work, family, friendship or hobby, and its main aim is to show how the product on offer can affect the consumer's everyday experience (Moroz, 2022, p. 110-114).

To sum up, the lifestyle of society nowadays is saturated with the media. Nearly everyone is influenced by them constantly. Its perception of reality, attitudes, and needs are largely shaped and manipulated by the media, which often imposes its models and content. Given all this, consumers often find it difficult to navigate through the abundance of information, distinguish the truth from a lie, and interpret and evaluate the messages objectively. Propaganda and manipulation have become an inseparable element of the modern media system. Individuals who receive the message passively and indiscriminately are particularly susceptible to manipulation. Therefore, it is important to develop in consumers the ability to think critically and to be aware that some advertisers deliberately construct messages in order to influence our needs, preferences, interests, opinions and choices (Biela, 2016, p. 310-311).

Results

In order to verify the issues associated with manipulation, presented in the theoretical part, an experiment was conducted to establish the impact on the consumer of various measures used in advertisements. The necessary data were gathered using the diagnostic survey technique with 102 participants. The original questionnaire was used, and it was shared on social media: Facebook, Instagram, and X (former Twitter). The participating population was diverse with respect to gender, age, education, place of residence and monthly net income per household member.

As stated above, manipulation in advertising can influence the choices, preferences, and actions of a consumer, which makes it a powerful marketing tool. However, it also raises questions about the ethics and honesty of advertising. According to a majority of the respondents (52.9%), persuasion in advertising involves making the consumer take a specific action in an open manner. This means that, in their opinion, advertisements try to convince people to perform certain actions. Furthermore, 40.2% of the respondents see persuasion in advertising as encouraging the consumer in a concealed manner to perform specific actions. This means that it is not always obvious that the aim of an advertisement is to manipulate and influence the consumers' choices but that they are subtly led to perform specific actions. A small percentage of the participants (6.9%) were convinced that there is no such thing as persuasion in advertisements.

Consumers perceive manipulation in advertising in various ways, which results in some of them regarding it as dishonest and misleading. Some advertisements can raise suspicions that the information provided in them is distorted or exaggerated in order to attract attention and persuade the consumer to make a purchase. A small percentage of the participants (3.9%) were convinced

that advertisements always or nearly always tell the truth. They believed that the information presented in advertisements was credible and consistent with reality. A considerable part of the respondents (44.1%) were of the opinion that advertisements were hiding most of the important information. This means that, in their opinion, advertisements did not tell the whole truth and did not reveal all the facts which could influence the consumers' decisions. Every third study participant (33.3%) thought that advertisements told only part of the truth. Those respondents were aware that some information in advertisements could be true but with some manipulations or selective presentation. In contrast, 12.7% of the respondents were of the opinion that advertisements always lied – they were dishonest and could not be trusted. A small portion (5.9%) did not have a clear opinion on this issue.

There are various methods of manipulation used in advertisements, such as the use of emotions, creating idealised visions, use of suggestive words, manipulating information and doctoring photographs. The aim of these techniques is to influence consumers' perceptions, provoke the desired emotional reactions and encourage them to buy products. Famous individuals or experts in a field are often used. Among the methods of manipulation, fragmentation was noticed the most frequently and was mentioned by 40.2% of the respondents. The use of authority and/or popularity of a person appearing in an advertisement was another frequently mentioned method of manipulation (39.2% of the respondents). An authority or a famous person is hired in order to influence the consumers' trust and to persuade them to buy a product. The respondents also mentioned other frequently used methods of manipulation: influencing people's emotions (35.3% of the respondents), idealisation (34.3%), hyperbolisation (25.5%), and making the message appear scientific (22.5%). The least frequently mentioned methods of manipulation included: the use of evaluative words (19.6%), implicature (19.6%), the use of structures that prevent negation (14.7%) and presupposition (11.8%) (Fig. 1).

Various methods of manipulation in advertisements influence consumers' decisions to various extents. Some techniques, like the use of emotions or creating idealised visions, can be more effective in stimulating impulsive buying, whereas others may have a smaller impact on consumers' decisions. Due to the differences in the respondents' perception of and reactions to various manipulation strategies, there is no universal method of manipulation with the same effect on everyone. In the respondents' opinion, four of the forms of manipulation have the greatest impact on consumers' decisions. These included: fragmentation, making a message appear scientific, idealisation and influencing people's emotions. Their impact is high or very high according to 29.1%, 30.4%, 31.4%, and 29.4% of the respondents, respectively (Tab. 1).

One can conclude, based on these results, that the use of evaluative words, the use of the authority and/or popularity of a person appearing in an advertisement, and implicature have a medium impact on the respondents' decisions. It is their

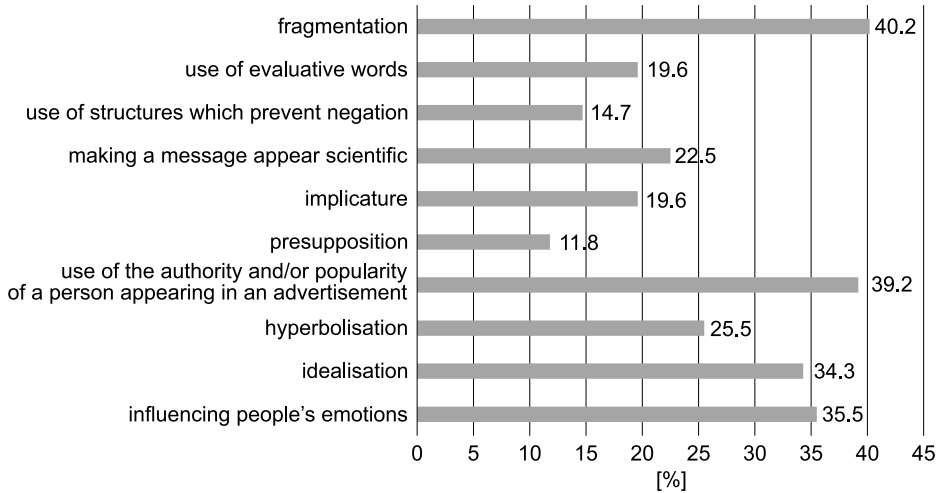


Fig. 1. Methods of manipulation noted in advertisements by the respondents
 Source: based on the author's studies.

Table 1

Impact of the methods of manipulation on the consumers' decisions

Item	Level of importance						
	very high [%]	high [%]	medium [%]	low [%]	very low [%]	insignificant [%]	no opinion [%]
Fragmentation	7.48	21.57	23.53	9.80	10.78	22.55	3.92
Use of evaluative words	5.88	16.67	19.61	23.53	13.73	16.67	3.92
Use of structures which prevent negation	5.88	5.88	28.43	19.61	18.63	16.67	4.90
Making a message appear scientific	8.82	21.57	21.57	15.69	13.73	14.71	5.88
Implicature	4.90	14.71	28.43	19.61	12.75	15.69	3.92
Presupposition	1.96	12.75	27.45	23.53	13.73	14.71	5.88
Use of the authority and/or popularity of a person appearing in an advertisement	10.78	15.69	25.49	11.76	13.73	18.63	3.92
Hyperbolisation	5.88	11.67	23.53	19.61	20.59	14.71	3.92
Idealisation	9.80	21.57	20.59	14.71	14.71	13.73	4.90
Influencing people's emotions	12.75	16.67	17.65	15.69	15.69	12.75	8.82

Source: based on the author's studies.

opinion that the use of structures that prevent negation, presupposition and hyperbolisation have the smallest impact. These methods are believed to have a small or very small impact on 38.2%, 37.3%, and 40.2% of the respondents, respectively. Moreover, a considerable portion of the respondent group regarded each of these methods of manipulation as not being an important factor in the purchase decision process.

Conclusions

The theoretical analyses and the empirical part of this study show that many people are aware of the concept of manipulation, but they do not always precisely understand its importance and impact on their consumer choices. There is often some confusion concerning the definition of manipulation, which leads to succumbing to the manipulation techniques in advertisements. It seems that not fully understanding the concept of manipulation can be a consequence of subtle or hidden methods by which manipulation is used in advertisements. Many people can react to the manipulation techniques unconsciously because they are complicated and well hidden behind apparently convincing advertising messages. In effect, consumers can make purchase decisions that are not fully conscious, and manipulation in advertisements can affect their choices and preferences.

The survey participants acknowledged that manipulation is frequently used in advertising. The most prevalent tactics include fragmenting the advertising message and exploiting the authority or fame of individuals featured in ads. The former had a considerable impact on the respondents, while the latter was also significant. Other methods of similar importance were presenting the message as scientific, idealising products, and influencing human emotions. Manipulation in advertisements often leads to situations in which consumers decide to purchase products that they do not actually need. Manipulative mechanisms, such as creating artificial needs, using psychological tricks or creating social pressure, effectively impact consumers' choices. In consequence, consumers often buy products that do not give them any satisfaction or benefit.

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ECONOMIC RESILIENCE OF POLISH REGIONS AND ITS DETERMINANTS IN THE PERIOD OF COVID-19 PANDEMIC

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Abstract

The aim of the research was to identify, based on available literature, factors determining the level of economic resilience of Polish regions and then verify whether they actually contributed to a more effective amortization of the demand and supply shock caused by the COVID-19 pandemic. The thesis was put forward that regions with a diversified and competitive production and employment structure experienced the negative effects of the economic slowdown to a lesser extent in the initial period of the pandemic and built their production potential faster in the following years.

Based on the results obtained, the relationship between the level of diversification of the production structure and the economic resilience of the studied regions was not confirmed. On the other hand, it was noticed that voivodeships with a competitive production structure were more likely to experience a decline in the growth rate of GDP per capita in the year of the outbreak of the pandemic. At the same time, in subsequent periods they returned to a relatively dynamic path of economic growth more quickly.

PRĘŻNOŚĆ EKONOMICZNA POLSKICH REGIONÓW ORAZ JEJ DETERMINANTY W OKRESIE PANDEMII COVID-19

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Kody JEL: R110, O180.

Słowa kluczowe: prężność ekonomiczna, wzrost gospodarczy, aktywność gospodarcza.

Abstrakt

Celem badań było wskazanie, na podstawie dostępnej literatury, czynników określających poziom prężności ekonomicznej polskich regionów, a następnie zweryfikowanie, czy w istocie przyczyniły się one do bardziej efektywnej amortyzacji szoku popytowo-podażowego wywołanego pandemią COVID-19. W pracy postawiono tezę, że regiony o zróżnicowanej i konkurencyjnej strukturze produkcji i zatrudnienia w mniejszym stopniu doświadczyły negatywnych skutków spowolnienia gospodarczego w początkowym okresie pandemii oraz szybciej obudowały swój potencjał produkcyjny w kolejnych latach.

Na podstawie uzyskanych wyników nie potwierdzono związku między poziomem zróżnicowania struktury produkcji a odpornością ekonomiczną badanych regionów. Zauważono jednak, że województwa o konkurencyjnej strukturze produkcji były bardziej narażone na spadek dynamiki PKB na mieszkańca w roku wybuchu pandemii. Jednocześnie w kolejnych okresach szybciej wracały one na stosunkowo dynamiczną ścieżkę wzrostu gospodarczego.

Introduction

Modern regional economies are open systems. While functioning, they enter into various interactions with their environment, which most often take the form of exchange of goods and production factors. Each of such interaction can be a catalyst for changes in the dynamics and structure of economic and, more broadly, social processes that take place in their area. The net effect of these changes, whether their consequence will be the broadly understood socio-economic development of a given region or, on the contrary, its regression, depends on the nature of the impulse itself, but also on the potential of a given region to react and adapt to events and processes occurring in the environment. In the literature, this ability is called economic resilience.

The issue of regions' resilience to external shocks and their ability to overcome them has become particularly important in recent years. This results, on the one hand, from the ongoing economic globalization and the growing interdependence of economies that accompanies this process. As a result, all impulses appearing in the global socio-economic space are quickly and effectively transferred between subsequent economies and production sectors. Secondly, the turbulent nature of the global economy increases under the influence of frequent and unpredictable

events that fundamentally change the conditions for the development of entire socio-economic systems. Examples include the coronavirus pandemic of 2020, Russia's aggression against Ukraine and the resulting crisis in the energy resources market, and finally the rapid development of artificial intelligence technologies, which is fundamentally changing the conditions of competitiveness in an increasing number of production sectors.

Therefore, the aim of the presented article was to determine the potential of Polish regions to respond to negative external shocks using the example of the COVID-19 pandemic. Referring to the literature on economic resilience, it was determined what factors may influence greater economic resilience of voivodeships¹ and then, based on data on the functioning of the labor market and changes in GDP per capita, it was verified whether they contributed to the fact that selected Polish regions have experienced the negative effects of the economic slowdown initiated by the coronavirus pandemic to a lesser extent.

In the cognitive aspect, achieving the research goal will allow for a better understanding of the factors shaping the level of economic resilience of regional economies. This, in turn, in practical terms, will constitute a premise for determining the directions and tools of economic policy aimed at ensuring lasting and balanced economic development of regions.

Purpose and Scope of Analyses, Hypothesis and Research Methods

The aim of the research was to identify, based on available literature, factors which influence the level of economic resilience of Polish regions. It also allowed to verify whether they actually contributed to a more effective amortization of the demand and supply shock caused by the COVID-19 pandemic. The thesis was put forward that regions with a diversified and competitive production and employment structure experienced the negative effects of the economic slowdown to a lesser extent in the initial period of the pandemic and built their production potential faster in the following years.

Achieving the goal required dividing the analysis process into several stages. First, based on literature studies, the concept of economic resilience was defined and selected factors stimulating it were indicated. In relation to the presented analyses, it was the structure and level of diversification of the regional economy.

The next step was to examine which regions were most affected by the economic slowdown caused by the pandemic. Based on the analysis of changes

¹ Voivodships are the largest local government units in Poland. Taking into account their characteristics, in research practice they are often identified with economic regions. For this reason, in the presented work the terms voivodship and region will be used interchangeably.

in the dynamics of GDP per capita growth, those voivodeships were identified in which the sensitivity to the above-mentioned impulse was relatively the highest and the lowest.

Then, based on data on gross value added generated in a given voivodeship, the level of diversification of the regional economy was determined. The Herfindal-Hirschman index (HHI) was used for this purpose. Originally, it was used by the US antitrust authorities to assess the degree of market concentration (Kwiatkowska, 2014, p. 191). Over time, it also began to be used to assess the level of production diversification on a local and regional scale (Xiao & Drucker, 2013, p. 152). It is calculated according to the formula (Kwiatkowska, 2014, p. 192):

$$\text{HHI} = \sum_{i=1}^n u_i^2,$$

gdzie:

HHI – Herfindal-Hirschman Index;

u_i – the share of a given PKD section in the total added value generated in the i -th voivodeship.

For easier interpretation, the obtained indicator values were multiplied by 10,000. As a result, the indicator obtained values in the range $[10,000/n, 10,000]$. Values close to minimum mean low levels of concentration. It is usually assumed that a value less than 1,000 means a high level of diversification, from 1,000 to 1,800 means a moderate level and above 1,800 means a high level of production concentration (Kwiatkowska, 2014, p. 192).

Finally, the level of competitiveness of regional economies was determined, assuming, based on literature research, that a higher level of competitiveness is characterized by economies with a relatively low share of agriculture and non-market services in the structure of production and employment with a high share of market services. For this purpose, data on the number of employees in a given voivodeship, divided into PKD sections, was used. After calculating the share of each section in the total number of employees, the individual values were aggregated into production sectors according to the following scheme:

- agriculture – section A,
- industry – sections B, C, D, E, F;
- market services – G, H, I, J, K, L, M, N, R, S, T, U;
- non-market services – O, P, Q.

The analysis period covered the years 2013-2022, with the end of the time series determined by the availability of statistical data. On the one hand, it allowed for showing economic growth processes in a slightly longer time perspective, and on the other, it allowed for capturing the first symptoms of economic recovery in the post-pandemic period.

The data came from publicly available databases, including primarily the website of the Central Statistical Office – Local Data Bank (Bank Danych Lokalnych, 2023).

The Concept of Economic Resilience and Its Determinants

The concept of economic resilience is a relatively new idea in economic sciences. It was inspired by physical and natural sciences in the context of analyzes of the ability of complex mechanical and biological systems to respond to external shocks. It allows to understand and describe how economies react and gradually return to the equilibrium level after exposure to selected shocks and disruptions that lead to an economic slowdown or even recession. It also describes selected spatial relationships connecting these economies into larger socio-economic systems (Cresenzi *et al.*, 2016; Lagravinese, 2015; Tóth, 2015).

In its broadest sense, the term resilience refers to the ability of an entity or system to self-correct, restoring its initial state after external shocks or other disturbances. In a narrower sense, it is used to describe the relationships occurring in the observed entity during and after selected disruptions, such as a crisis or the process of economic transformation (Drobniak, 2014, p. 16). Importantly, for a long time it was the domain of considerations conducted within the technical sciences (engineering approach) (see Peng *et al.* 2017; Cai *et al.*, 2012) or natural sciences (ecological approach) (Wieteska-Rosiak, 2018, p. 34).

The concept of resilience was included in the scope of economic sciences only after the global economic crisis caused by the crash of the US real estate market in 2008. The concept of economic resilience is, in fact, an attempt to combine the technical (engineering) and ecological approaches within one, relatively coherent theory (Modica & Reggiani, 2014, p. 215).

As Drobniak notes (Drobniak, 2014, p. 16), in the literature on the subject one can find at least four different ways of defining this concept:

- as a way of responding to specific and unforeseen events and shocks;
- as the stability of the system in the face of emerging disturbances. In this respect it can be treated as a permanent feature, a property of the system;
- as the ability to avoid and cope with natural and anthropogenic threats;
- as a concept for better understanding the process of managing complex social and ecological systems.

To summarize, a socio-economic system can be considered resilient if, in the event of a negative shock, its balance (or development trajectory) is not disturbed or changes only slightly, or if it relatively quickly returns to the state before the shock occurred.

The most important indicators reflecting the level of economic resilience include, first of all, changes in the volume of production and changes in the level of employment (unemployment) (Sensier & Artis, 2014, p. 590). The analysis of employment changes may be particularly important because it better reflects the social consequences of economic shocks (Fratesi & Rodriguez-Pose, 2016, p. 39). This is due to the fact that the level of employment returns to the values observed before the shock and recession with a much longer delay than production (Reinhart & Rogoff, 2009, p. 470).

The literature on the subject contains many analyzes aimed at measuring the level of economic resilience and identifying its most important determinants. The results of these analyzes (their interesting review can be found in: Drobniak, 2015; Tóth, 2015; Martin & Sunley, 2020, Drobniak *et al.*, 2021) indicate that the key factors increasing the level of regional economic resilience are, among others, a diversified production structure, in which a relatively large part are activities related to the modern service sector.

For example, the research results of Daly *et al.* (2009) and Modica and Reggiani (2014) indicate that regions that specialized in service activities emerged from the periods of production collapse relatively faster (some of them did not even record a decline in production) than centers with relative dominance of manufacturing activities.

A diversified production structure stimulates economic resilience in three dimensions (Peng *et al.*, 2017, p. 91):

- it may be a factor preventing the economy from locking itself onto one development path as a consequence of excessive production specialization. Diversification can weaken the negative impact of the collapse in the dominant industry/production sector and facilitate rapid economic recovery;
- a diversified production structure allows for a better transfer and dispersion of external shocks in various directions (sectors and departments) of the economy, contributing to faster recovery and faster adaptation to changed conditions;
- adapting the production structure to changing conditions, strengthening scientific and technological innovations, rational development of natural resources and active nature protection proceed faster in the conditions of a diversified production structure.

Selected Dimensions of the Economic Resilience of Polish Voivodeships in the Period 2013-2022 – Analysis Results

The processes of development and economic growth of regions are of a long-term nature and should be analyzed in this perspective. This allows for capturing general trends and characteristic development features. For this reason, the years

2013-2022 were adopted as the research period. At the same time, the analysis was limited only to the analysis of the dynamics of changes in basic economic values in voivodeships, thanks to which it was possible to more clearly capture the impact of a negative external shock in the form of the COVID-19 pandemic on the socio-economic processes taking place in Polish regions.

Table 1 presents the growth rate of GDP per capita, as the most synthetic measure of the level of economic growth in Polish voivodeships in 2014-2022.

Table 1

Annual growth rate (in %) of GDP per capita of voivodeships in 2014-2022 (current prices)

Voivodeship	2014	2015	2016	2017	2018	2019	2020	2021	2022
Dolnośląskie	4.77	5.41	2.51	6.65	6.08	7.74	2.98	14.37	18.54
Kujawsko-Pomorskie	3.74	5.85	3.08	6.19	7.62	5.49	5.93	12.99	17.21
Lubelskie	3.35	3.72	3.72	7.37	5.07	8.04	3.87	12.37	15.90
Lubuskie	6.10	4.15	3.66	5.29	6.32	6.54	3.81	12.93	16.95
Łódzkie	4.93	5.47	2.86	6.80	6.92	8.83	6.09	11.53	14.81
Małopolskie	4.88	7.19	3.69	7.82	8.13	6.89	1.40	14.09	14.46
Mazowieckie	3.68	5.80	2.86	7.60	7.99	8.72	0.59	10.94	18.64
Opolskie	5.59	5.01	1.69	6.57	6.99	7.35	3.61	16.09	13.57
Podkarpackie	4.19	5.66	2.70	5.78	8.32	7.77	1.07	14.22	13.56
Podlaskie	3.97	3.51	2.81	8.31	6.63	8.30	5.28	11.65	18.15
Pomorskie	3.29	6.76	4.01	6.51	8.06	7.76	-0.53	16.02	21.26
Śląskie	4.39	5.90	2.96	6.87	7.53	6.38	0.83	16.15	18.91
Świętokrzyskie	4.70	4.67	2.16	6.62	8.11	6.16	5.10	12.98	11.67
Warmińsko-Mazurskie	4.98	4.31	3.61	5.48	5.00	6.63	6.99	12.45	14.81
Wielkopolskie	4.59	6.93	3.78	7.02	6.05	8.25	2.62	11.62	15.69
Zachodniopomorskie	5.34	6.30	2.19	6.60	7.14	6.73	4.46	12.61	13.92

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

Taking into account the entire analyzed period, it should be emphasized that the average annual growth rate of GDP per capita was similar and ranged from 8.13% in the Pomorskie Voivodeship to 6.91% in the Świętokrzyskie. Importantly, relatively small disproportions in the dynamics of economic growth between voivodeships were observed in most of the analyzed years, not only for the average values for the entire research period. The difference between the voivodeship with the highest and lowest GDP per capita growth dynamics in 2014-2019 was from 2.31 percentage points in 2016 to 3.68 in 2015. Similarly, the coefficient of variation in 2014-2019 was relatively low and ranged from 11.72% in 2017 to 21.8% in 2017.

The trend of relatively stable and sustainable economic growth in voivodeships was disrupted by the onset of the coronavirus pandemic. Actions taken by Polish and European authorities to limit the transmission of the virus and prevent its negative socio-economic effects had a significant impact on the dynamics of development processes. As a result, the economic growth dynamics of voivodeships in 2020 and subsequent years has become significantly diversified. In the first year of the pandemic, the gap between GDP per capita growth rates increased to 7.52 percentage points and the coefficient of variation up to 63.9%. In the following years, these disproportions were not so large, but noticeably higher than in the period 2014-2019.

The demand-supply shock in the first period (2020) most affected the Pomorskie voivodeships, where a decrease in GDP per capita by 0.53% y/y was recorded, and the Mazowieckie voivodeship (an increase of 0.59%), Śląskie voivodeship (0.83%), Podkarpackie (1.07%) and Małopolskie (1.4%). At the same time, there were regions (Łódzkie, Kujawsko-Pomorskie, Świętokrzyskie, Warmińsko-Mazurskie, Podlaskie) where the annual economic growth rate was relatively high and exceeded 5%. Therefore, the question arises about the factors that could have influenced such a diverse response to changes in the conditions of development processes.

According to the concept of economic resilience, an important stimulator of the regions' ability to absorb external shocks is the diversified production structure. Hence, Table 2 presents the development of the HHI value added index (as a measure of the level of production diversification) in 2019, i.e. the period immediately preceding the outbreak of the pandemic.

Analyzing the spatial distribution of the HHI index, it can be noted that the level of production diversification in Polish regions in 2019 was relatively high. In four voivodeships its value was below 1,000 units, which indicates a highly diversified structure. In the remaining cases, they ranged from 1,034 to 1,302, i.e. at a moderate level, but significantly below the limit allowing the production structure to be described as highly concentrated.

Comparing the above information with data on the change in GDP per capita in 2020, it can be noted that the relatively high resistance to the shock caused by the onset of the COVID-19 pandemic (voivodeships with the highest GDP growth dynamics per capita) did not correspond to a high degree of production diversification. Conversely, the regions in which the greatest change in economic growth dynamics was observed in 2020 did not belong to voivodeships with a relatively high level of production concentration. In the first group of voivodeships, the average value of the HHI index in 2019 was 1,097 units, while in the second group it was 1,067 units. In other regions it was at the level of 1,113 units. The observed differences are therefore relatively small and do not allow identifying significant relationships between the degree of diversification of voivodeships' production in 2019 and the sensitivity of their economies to the shock of the pandemic and the socio-economic processes triggered by its outbreak.

Table 2

Values of the HHI value added index at the level of PKD sections
in Polish voivodeships in 2019

Voivodeship	HHI
Dolnośląskie	1,010
Kujawsko-Pomorskie	1,097
Lubelskie	1,246
Lubuskie	934
Łódzkie	1,238
Małopolskie	1,072
Mazowieckie	979
Opolskie	889
Podkarpackie	1,207
Podlaskie	1,302
Pomorskie	1,034
Śląskie	1,062
Świętokrzyskie	1,102
Warmińsko-Mazurskie	1,055
Wielkopolskie	1,256
Zachodniopomorskie	946

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

The correlation coefficient between the HHI index value and the average GDP per capita growth rate of the surveyed voivodeships is negative, which confirms the thesis – regions with a more diversified production and employment structure were characterized by higher economic growth dynamics. Importantly, this relationship was observed both during the period of relatively good economic conditions (2014-2019) and the economic slowdown during the pandemic. On the other hand, it should be emphasized that the value of the calculated correlation coefficient was relatively small (-0.08), although this was probably due to the relatively small research sample.

Another feature of economies that is mentioned in the literature on the subject as important in the context of stimulating economic resilience is a modern and competitive production structure. Unlike economies with a relative dominance of traditional sectors (agricultural, industrial), it allows a relatively quick return of socio-economic systems to the initial development trajectory, generates high added value and high income from work (Merło *et al.*, 2015, p. 23).

For this reason, Table 3 presents the sectoral employment structure (as a measure allowing to assess the level of competitiveness of economies) in the studied regions in 2019, i.e. the year preceding the economic collapse caused by the COVID-19 pandemic.

Table 3

Sectoral employment structure in voivodeships in 2019

Voivodeship	Employment structure in %			
	agriculture	industry	market services	non-market services
Dolnośląskie	1.2	35.1	41.6	22.1
Kujawsko-Pomorskie	2.0	37.6	34.1	26.2
Lubelskie	2.1	32.5	32.1	33.3
Lubuskie	3.3	39.0	33.4	24.4
Łódzkie	1.2	35.2	39.5	24.1
Małopolskie	0.6	33.4	42.3	23.7
Mazowieckie	0.7	21.7	59.9	17.7
Opolskie	1.9	40.3	29.6	28.2
Podkarpackie	1.1	38.2	32.0	28.7
Podlaskie	1.6	33.5	33.0	31.8
Pomorskie	1.6	35.5	39.8	23.1
Śląskie	0.5	43.7	34.0	21.8
Świętokrzyskie	1.5	36.8	31.0	30.8
Warmińsko-Mazurskie	3.8	38.9	27.9	29.3
Wielkopolskie	2.0	36.3	44.6	17.1
Zachodniopomorskie	2.9	34.2	35.8	27.1

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

The analysis of the above data allows for the observation of several fundamental facts in the context of changes in the level of economic activity of the surveyed voivodeships in the context of the COVID-19 pandemic.

Firstly, in the case of regions with the most competitive employment structure, a relatively large change in GDP dynamics could be observed in 2020 compared to the period before the outbreak of the pandemic. In four regions where employment in market services exceeded 40% of the total number of employees (Mazowieckie, Wielkopolskie, Małopolskie, Dolnośląskie), GDP per capita in 2020 was on average 1.9% higher than the year before. At the same time, in the voivodeships where this share was the smallest (below 34%), i.e. the Warmińsko-Mazurskie, Opolskie, Świętokrzyskie, Podkarpackie, Lubelskie, Podlaskie, Lubuskie and Śląskie voivodeships, an average increase in GDP per capita of 4.05% was recorded. In other voivodeships the increase was 3.34.

At the same time, in the following year in the first, most competitive group, the average GDP growth was 14.8%, while in the second (least competitive) group the increase was 14.4%. It follows that the large share of market services in the employment structure resulted in relatively high sensitivity to the shock

caused by the outbreak of the pandemic, but at the same time favored a faster recovery of growth potential in subsequent periods.

In turn, opposite trends could be observed in the labor market. The four voivodeships with the largest share of market services in the employment structure recorded the relatively smallest decline in employment (an average of -0.42%) in 2020 compared to 2019². In turn, in the regions where this share was the smallest, employment dropped on average by 1.99%. This, in turn, may suggest a relatively large impact of the employment structure on the sensitivity of regional labor markets.

Summary and Conclusions

The concept of resilience, including economic resilience, is a relatively new concept in economic sciences. In general terms, it means the ability of complex systems to self-repair, restoring the initial state of balance after the absorption of negative exogenous shocks. In a narrower economic sense, this term refers to economies that, in the face of a demand or supply shock, do not experience a significant decline in the level of economic activity or return to their original growth path relatively quickly. The issue of economic resilience becomes particularly important given the growing turbulent nature of the modern economy.

The aim of the presented analyzes was to determine the economic resilience of Polish voivodeships in the face of a negative external shock such as the outbreak of the COVID-19 pandemic in 2020. For this purpose, the change in GDP growth dynamics was determined in the period before and during the economic collapse caused by the pandemic. Additionally, it was checked whether, according to the literature on the subject, the factors stimulating the level of economic resilience could be a diversified and competitive structure of production and employment.

The analyzes carried out allowed for several basic conclusions to be drawn. Firstly, Polish regions had different reactions to the shock caused by the onset of the pandemic. As for the dynamics of GDP per capita growth, in 2020 in some regions there was a decrease (Pomorskie Voivodeship) or a slight increase (at the level of 1% or below) of this indicator (Mazowieckie, Śląskie and Podkarpackie Voivodeships). This is important because in previous years the increase was at the level of 5.5% on average in the country. At the same time, in some voivodeships (Łódzkie, Kujawsko-Pomorskie, Świętokrzyskie, Warmińsko-Mazurskie, Podlaskie) in 2020 GDP per capita increased by at least 5%. Therefore, this indicates the diversified economic resilience of Polish regions and raises the question about its determinants.

² Due to space limitations, detailed data on employment changes during the onset of the pandemic and during it were not presented.

As for the level of production diversification, measured by the Herfindal-Hirschman index, no significant relationships can be identified. The level of this indicator in all voivodeships in 2019 was at a level indicating a highly or moderately diversified production structure. At the same time, the differences in its values between individual voivodeships and groups distinguished due to the change in the dynamics of GDP per capita growth in 2020, were so small that it cannot be said to have an impact or not on the economic resilience of the examined economies.

The analyzes conducted show that the factor that significantly influenced the level of economic resilience of Polish regions during the COVID-19 pandemic was the competitive and effective production structure. Voivodeships with a relative dominance of market services in the first period of the slowdown caused by the pandemic recorded the relatively largest decline in GDP growth dynamics per capita. However, in the following year the economic growth rate in these regions was relatively the highest. At the same time, the decline in employment in 2020 was the smallest in these regions. This indicates a relatively high sensitivity of production to external demand and supply shocks, but also a high potential for rebuilding the original growth trajectory. Opposite trends were observed in regions where the structure of production and employment was not so competitive. This may also indicate that the uncompetitive production structure with a large share of industries characterized by low demand elasticity (mainly agriculture) was a factor building a higher level of regional resilience.

It follows from the above that building economic resilience requires strengthening structural changes in the production structure in the regions. Nevertheless, the mechanism of processes occurring in the economy during an exogenous shock remains unrecognized. The long-term characteristics of the response of the studied economies to external impulses are also unknown. Therefore these research issues will determine the direction of the author's future analyzes in relation to analyzes of the economic resilience of Polish regions.

Translated by Author

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- b) responses to reviews,
- c) the Author's statement (the relevant form can be found on the website),
- d) information about the name and last name of the translator and the native speaker,
- e) consent for the processing of common personal data (the relevant form can be found on the website).

The final version of the article submitted by the author will be verified by the statistical editor.