

THE IMPACT OF REGIONAL VARIATION IN ECONOMIC CONDITIONS ON CONSUMER ATTITUDES AND BEHAVIOR DURING THE CRISIS

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Purpose: The main purpose of the article is to assess the impact of regional variations in economic conditions on consumer attitudes and behavior during the crisis. The study was carried out using the example of Polish voivodeships.

Design/methodology/approach: In order to implement the study goal formulated, an analysis of the indicators characterizing the economic and income situation of Polish voivodeships was conducted. The assessment of the crisis-related consumer attitudes and behaviors, including the regional variation thereof, was carried out based on a CATI survey of a randomly selected group of 1000 respondents in Poland, relative to 2023. The differentiation and disparity across voivodeships, with respect to the phenomena surveyed, was subjected to calculation. The surveyed objects were clustered using the Ward's method, to verify the impact of the economic differentiation and indicator levels on consumer attitudes and behavior during the crisis.

Findings: Poland remains significantly regionally differentiated in terms of the economic level of voivodeships as well as household and consumer incomes. The crisis is clearly of no subsidy in reducing these disparities. Particularly substantial disparities are found between the poorest voivodeships of eastern Poland and the richer ones of western Poland. The economic and income standing of the voivodeships is reflected in consumer attitudes and behavior. Concerns associated with the deterioration of the material position and income, often accompanied by reduced sense of security and stability of employment, are considerably more often expressed by residents of voivodeships characterized by inferior economic indicators and lower income.

Research limitations/implications: The Implication behind the survey entailed the examination of whether the crisis has caused changes in the attitudes and behavior of Polish consumers, as well as whether their concerns and constraints have been influenced by the economic and income condition of the regions.

Practical implications: The conclusions drawn in the study can serve as a useful tool for public and utility entity managers, enabling more effective application of remedial and intervention measures, relative to the residents of regions characterized by unfavorable economic conditions and crisis-related negative sentiment.

Social implications: The article provides useful insights on the economic and income indicators, as well as the on impact of existing regional differences on consumer attitudes and behavior amid the crisis, which the voivodship managers as well as the central authorities in Poland should familiarize themselves with.

Originality/value: The added value of the article lies in the evaluation of recent secondary and primary source data on the differences in the economic condition of the voivodeships in Poland, including the impact of these differences on consumer attitudes and behavior, relative to their work, financial situation and sense of security during the crisis.

Keywords: economic development, income, crisis, consumer behavior, attitudes, voivodeship.

Category of the paper: research paper.

1. Introduction

The performance of socio-economic factors leads to variations in the economic situation of countries and their regions, and thus to different levels of planning and development (Malina, 2020). Significant disparities in the economic potential of regions, with multiple underlying reasons, have been for years observed also in Poland (Murawska, 2009; Bożek, Szewczyk, Jaworska, 2021). Apart from historical conditions, other factors should be mentioned, such as: the volume of production, the effectiveness of new investment implementation, development of educational opportunities and new job generation, the inflow of foreign capital, the level of population income, the level of technical and social infrastructure, etc. Regional economic conditions shape the immediate and distant environment affecting consumption and consumer behavior, as well as determine the degree to which needs are satisfied (Grzega, 2011a, 2011b; Murawska, 2014). They exist independently of the subjects of consumption, and arise from e.g., the economic situation of the country, the state of the economy or the political trends. Consequently, regional development translates directly into the level and quality of the residents' lives.

The current crisis, sparked by the outbreak of the Covid-19 pandemic in 2020, has been marked by surprisingly extensive and profound negative consequences, which are reflected in the economic indicators characterizing the socio-economic development of countries and regions. Crisis symptoms, on the macroeconomic level, may include a decrease in GDP, high inflation, decline in production and investment, reduction in wages, increased budget deficit and public debt, reduction in the rate of exports, etc. (Malinowski, 2008). In microscale terms, social-dimension symptoms of a crisis include: an increase in unemployment, rising prices, a decline in real income and consumer purchasing power, changes in the structure of consumption or behavioral patterns, as well as states of severe anxiety and depression resulting from the fear of losing employment, difficulties in finding new employment, deteriorating financial and income standing, as well as difficulties in repaying loans or meeting basic needs (Berbeka, 2006; Burgiel, 2011; Zalega, 2011). Since the outbreak of the pandemic in 2020, a cycle of negative events has begun, reflected in the above-mentioned effects. The causal links between the economic indicators making up the macro environment of economic agents and the consumer sentiment, attitudes and behavior are of further indirect, yet not less significant than the proximate direct factors, relevance.

Taking the above premises into account, the main objective of the article entailed the assessment of the impact exerted by regional variation in economic conditions and the impact thereof on consumer attitudes and behavior during the crisis. Several specific objectives were defined within the scope of the main objective:

- assessment of regional differentiation in the economic situation of Polish voivodeships;
- characterization of the attitudes and behaviors of the consumers residing in the various voivodeships, relevant to the current crisis, and concerning such aspects as the sense of employment security and the financial situation, including the residents' stance towards the rationalization of consumption and the changes in shopping habits;
- assessment of the relationship/correlation between the variation in the economic condition of Polish voivodeships and the range of positive and/or negative attitudes, including the crisis-affiliated concerns and behaviors indicated by the residents of these voivodeships.

The study carried out was intended to verify the following hypotheses:

- H1. The economic crisis has caused a change in the attitudes and behavior of Polish consumers as well as increased the concerns over loss of employment and livelihood, maintenance of income, family financial situation, the onward satisfaction of needs at an appropriate level, and the sense of security.
- H2. During the crisis, consumers have reduced the level of personal and household consumption, altered their shopping habits, and their consumption has become more rational.
- H3. Crisis-related concerns, anxieties and constraints, including changes in purchasing behavior and greater rationalization of consumption, are traits exhibited relatively more often by residents of poorer voivodeships characterized by unfavorable economic conditions.

2. Literature review

Crises are among the causes of specific consumer behaviors, which are determined by the consumer attitudes and moods prevalent at a particular time (Burgiel, 2011). Solomon defines consumer behavior as the process of selecting, purchasing, using, accepting or rejecting products, ideas or experiences, to satisfy needs or desires expressed by an individual or a group (Solomon, 2006). Antonides and van Raaij, in turn, note that consumer behavior encompasses the mental and physical activities, including the underlying motives and causes, performed by individuals and groups throughout the consumption cycle, in pursuit of their goals and values, resulting in satisfaction and well-being, taking the individual and social effects of these behaviors into account (Antonides, Raaij, 2003). A term parallel, and somewhat synonymous,

to consumer behavior is consumer attitude. Both signify relatively constant tendencies to adopt a positive or negative attitude toward the object of that attitude, i.e., a concrete or abstract thing, person, or event. Attitudes can also be formed based on emotions and beliefs, which in turn constitute the object of experience with the object of the attitude (Stasiuk, Maison, 2014). Attitude is identified as a predisposition to respond and pre-exists behavior, that is, it makes way for and precedes the behavior, yet it does not fully equate with it (Jeżewska-Zychowicz, 2010). As Sobczyk (Sobczyk, 2018) notes, attitudes are thus related to the evaluation of something or someone, whereas consumer behavior refers to the manner of acting throughout all phases of satisfying the physiological and psychological (emotional) needs. Attitudes influence consumer behavior, and are shaped by one's own experiences or opinions created by the environment.

Consumer attitudes and behaviors are formed under specific social, cultural and economic circumstances, which vary from country to country or region to region (Kieźel, 2010). Economic conditions, both in the macro- and micro-environment, play an important role. What started to consistently effect changes in consumer attitudes and behavior from 2020 onward was the intensifying economic crisis precisely.

A crisis implies a momentum, a breakthrough or a change in the previous development trends of a particular phenomenon. It often entails a period of serious difficulties, manifested by a sharp decline in economic activity (Malinowski, 2008). The term economic crisis is most often used in the context of sudden and unfavorable developments in the social, political, economic and medical spheres (Derkacz, 2020). Within the economic sphere, a crisis is defined as an economic slump. It represents an economic cycle phase characterized by a decline in the volume of production, a reduction in capital expenditures, a decrease in the population's real wages, and an increase in the unemployment and inflation rates. The financial situation of the affected state deteriorates, which is often accompanied by an increase in the budget deficit and public debt (Czech et al., 2020). A crisis can involve not only a decline in GDP growth, but also growing inequality in income and opportunity, increasing financial market instability, environmental problems, and the decay of human, social, as well as moral capital (Horodecka, 2017).

A crisis can arise as an aftermath of some negative event, such as an accident, a quarrel, a stock market crash, a disagreement in a coalition, but it can also manifest as a symptom of mass-scale events, such as wars or pandemics. Crisis as a state of the psyche is characterized by a high degree of emotional tension, largely experienced as a state of fear or disturbance of mental balance (Czech et al., 2020). During a crisis, the threat of employment loss or lower income intensifies, which in turn affects consumers' sense of economic stability. This is directly reflected in the buying behavior on the goods and services market. Consumption behavior modification during a period of crisis is mainly driven by deteriorating consumption sentiment, reduced sense of security and, consequently, less optimistic attitudes towards the future (Zalega, 2012). Hence, as Grzega notes (Grzega, 2011a), an economic crisis as a macroeconomic

determinant, is only to some extent an occurrence independent of individual consumption actors, and these actors very rarely realize that their market actions contribute to the existing crisis situation.

The impact of the last major economic crisis, the so-called “financial crisis” of 2008-2009, on consumer consumption, attitudes and behavior in Poland and worldwide (Słaby, 2009; Mazurek-Łopacińska, 2010; Rudawska, 2010; Taraszkiewicz, Bistram, 2010; Burgiel, 2011; Zalega, 2011; Kosicka-Gębska, Gębski, 2013; Başev, 2014), as well as on the process of consumption decision-making (Małysa-Kaletka, 2011) or the changes in purchasing (Sowa, 2011), has been studied by many authors. These authors emphasize that the significant increase in prices, resulting from recession and the consequent decrease in consumers' purchasing power, can be expected to trigger various negative emotional states, ranging from anxiety to shame at not being able to satisfy one's needs at the same level as before the crisis (Słaby, 2009). This does not apply to all consumer groups, however. High-income households, for instance, are characterized by reasonably weak, on an individual level, emotional impact of financial crises, as they are able to sustain relatively higher levels of *per capita* income, and their consumption structure is more modern, which is reflected in lower shares of expenditures on food, and higher shares of expenditures on broadly defined services, in total expenditures (Zalega, 2011).

Economic crises hinder the functioning of all market players, including households, which face many dilemmas as a result, i.e., decisions must be made on what portion of income should be allocated to consumer spending and what portion to savings for securing future consumption. The deteriorating income situation of households renders such decisions a challenge (Śleszyńska-Świdorska, 2013). Occurrence of unexpected changes in the macroenvironment forces companies to undertake measures aimed at adapting to the new situation as well as consider changes in their routines, habits or established modes of operation (Chlipała, Żbikowska, 2021). As emphasized by Burgiel (Burgiel, 2011), crises are, on the one hand, associated with a massive collapse in sentiment and a sense of uncertainty, yet, on the other hand, it is the consolidation of such states in the minds of the market players as well as the expanding wave of pessimism, which contribute to the deepening of recessions (Rozmus, 2009). The opposite applies during periods of recovery – economic prosperity raises hopes for the future, which shapes specific behaviors of the market players (e.g., higher purchasing propensity), while the optimism embraced by an increasing number of customers becomes one of the sources of actual economic improvement, as the consumer decisions that are positive for the economy are replicated by more players (Burgiel, 2011).

In consequence of the crisis surrounding the outbreak of the COVID-19 pandemic in 2020, successive works have been written, describing changes in consumer attitudes and behavior (Kalinowski, Wyduba, 2020; Oana, 2020; Sheth, 2020; Stanciu et al., 2020; Chlipała, Żbikowska, 2021; Karaboga, Ozsaatci, 2021; Rabbi et al., 2021; Marciniuk-Kluska, 2022; Maciejewski, 2023). A study of consumers in Turkey showed that sub-dimensions of the

consumer perception of crisis, such as frugality and caution, had a significant impact on purchasing behavior (Karaboga, Ozsaatci, 2021). By contrast, authors examining consumer shopping behavior in Bangladesh (Rabbi et al., 2021) concluded that the higher intensity of Covid-19's impact translates into greater food stress associated with reduced income and higher food prices, whereas food stress directly affects consumers' shopping and consumption behavior.

As mentioned earlier, all economic and social phenomena are significantly differentiated on a regional level. Substantial differences also exist in the subjective attitudes and behavior of consumers and households. This is attributable to the richness and heterogeneity of the natural, social and human environment. Regional economic disparities are inevitable, for different regions are subject to different conditions, and a certain degree of regional disparities can actually foster each region's individual advantages, promote the overall coordinated development of regional economy, and optimize the allocation of resources. Moderate regional differences can mobilize economic vitality and improve development efficiency, but excessive differences can lead to social instability and even turbulence (Li, 2021).

Differences in regional development have been an ever-present issue attracting much attention from researchers (Willis et al., 2020). Spatial differentiation in the level of economic development has been studied by many Polish authors over the past years, based on the example of regions, voivodeships or municipalities both in Poland (Murawska, 2009, 2010; Właźlak, 2010; Rokicki, 2016; Wójtowicz, 2016; Wyszowska, Serwatka-Bober, 2018; Malina, 2020; Zaród, 2020; Spychała, Spychała, 2022) and other countries (Sun et al., 2020; Buchholz, Bathelt, 2021; Floerkemeier, Spatafora, 2021; Grillitsch et al., 2021; Tan, Lv, 2022). Although efforts have been made over the years to bridge regional differences (Michoń, 2017), some regions remain much more developed than others. Conclusions from ongoing studies confirm the significant disparities between the eastern and western parts of Poland (Dębowski, 2013; Wyszowska, Serwatka-Bober, 2018; Malina, 2020; Spychała, Spychała, 2022). The authors also debate whether policymakers should focus on improving the economic performance of less developed regions or, conversely, accept the existence of regional disparities and instead support the households in less developed regions through transfer payments, investments in education, health care and other basic services as well as by facilitating migration (Floerkemeier, Spatafora, 2021).

Regional development differentiation is a measurable multidimensional phenomenon, yet it is examined very diversely. It can be analyzed at various levels of generalization, in different temporal and spatial cross-sections, and in relation to various fields of socio-economic activity. Regional differences are ever present, but they become even more pronounced during certain limited time periods, such as during an economic crisis (Global Economic Prospects, 2023). An unstable environment, in turn, conditions the fears and anxieties associated with the crisis and, consequently, determines more rational and frugal consumer behavior, which further translates into decreased demand, lower economic

development and crisis aggravation. It is therefore of significant research relevance to analyze the above issues within the context of regional differences.

3. Research methodology and process

To determine the variation in the economic conditions across Polish regions as well as the regional differences in consumer attitudes and behavior, including the relationship thereof to the phenomena under study, both secondary and primary sources were used. Consideration of the right data sources and selection of proper indicators is of utmost importance, as it ensures study results providing reliable and credible conclusions on the issues under analysis.

To assess the differentiation in the level of economic development and consumer income in the voivodeships of Poland, at the NUTS 2 level, the indicators collected by the Central Statistical Office (GUS, 2023a) were used. Nine indicators (variables) and 16 Polish voivodeships (cases) were studied. The analysis of economic data covered the period of 2020-2021 (Table 1).

In order to collect information on the current crisis-related consumer attitudes and behavior, a direct questionnaire survey was conducted among 1000 Polish residents. The sample selection for the survey was random, representative of both the socio-demographic characteristics of the Polish population (gender, age) and the administrative division of the country into NUTS 2 voivodeships. The survey was carried out by means of the CATI method, using an authorial questionnaire, developed for the purpose of implementing the research project No. 2022/06/X/HS4/01158 and funded by the National Science Center in Poland, entitled “Deconsumption as an alternative trend in behavior rationalization in the era of the global economic crisis” [Dekonsumpcja jako alternatywny nurt racjonalizacji zachowań w dobie globalnego kryzysu gospodarczego]. The survey was conducted among a representative group of Polish residents aged 18 and over, with the support of the research company ASM – Centrum Badań i Analiz Rynku Spółka z o. o. Apart from the voivodeship of residence, the characteristics adopted in the survey included such socio-demographic characteristics as the respondents' age, gender, education, occupational status, income level and indebtedness. The average survey respondent was a 56-year-old or older (37.6%), with a college degree (49.2%), employed (68.0%), living in a city of up to 50000 residents, head of household (79.7%), financially comfortable (49.0%), with savings and no debts (45.2%), averaging a net monthly income per household member within the range of PLN 2501 to 4500 (33.0%) and the same level of personal monthly take-home income (29.0%). The questionnaire consisted of several thematic blocks addressing consumer attitudes and behavior during the crisis. For the purposes of the present article, questions regarding the respondents' place of residence, socio-demographic characteristics, and opinions on their current crisis-related feelings, concerns and behavior were included as well.

Table 1.

Indicators factored into the assessment of regional economic condition variation in Poland (NUTS 2 level)*

| No. | Index/Variable designation | Abbrev. | year |
|-----|--|---------|------|
| 1 | gross domestic product <i>per capita</i> in PLN | GDP | 2020 |
| 2 | gross value added per working person in PLN | GVA | 2020 |
| 3 | nominal gross primary income <i>per capita</i> in PLN | NGPI | 2020 |
| 4 | nominal gross disposable income <i>per capita</i> in PLN | NGDI | 2020 |
| 5 | registered unemployment rate in % | RUR | 2021 |
| 6 | average monthly gross earnings (wages and salaries) in PLN | AMGE | 2021 |
| 7 | average monthly gross pensions and annuities in PLN | AMGP | 2021 |
| 8 | average monthly available household income <i>per capita</i> in in PLN | AMAI | 2021 |
| 9 | average monthly disposable household income <i>per capita</i> in PLN | AMDI | 2021 |

* The data derives from sections 05, 06, 07, 19 of the Statistical Yearbook of Voivodeships 2022 [PL: Rocznik Statystyczny Województw 2022].

Source: own elaboration based on (GUS, 2023a).

The data collected was subjected to statistical analysis (Luszniewicz, Słaby, 2003; Wysocki, Lira, 2005). Among other factors, coefficients of variation (V_s), measures of distance (D) and spread (R), skewness, kurtosis, correlation coefficients (r_{xy}) as well as coefficients of determination (R^2) were calculated. Using the correlation coefficient r_{xy} , an attempt was made to verify whether the changing values of economic indicators in each voivodeship are reflected in consumers' greater or less frequent declaration of a sense of security and stability, relative to their employment as well as personal and household financial/income standing, and whether the crisis has shifted consumption habits toward greater rationalization. After analyzing the economic (GDP, GVA, NGPI, NGDI, RUR) and income indicators (AMGE, AMGP, AMAI, AMDI), they were weighed against the percentage of indications for selected survey questions, with respect to individual voivodeships in Poland. The voivodeships were grouped by both the economic conditions and the consumer crisis-related attitudes, using the Ward's method. The results of the correlation analysis were further summed up, in order to demonstrate the impact of voivodship economic conditions on consumer crisis-related attitudes and behavior.

4. Survey results and discussion

Consumers purchasing and consumption decisions are made under a specific setting of economic conditions. The economic indicators most commonly taken into account in order to present the level of national and regional economic development are gross domestic, nominal gross primary and disposable income *per capita*, as well as gross value added per 1 working person. To assess the labor market and its regional differentiation, ideally, the registered unemployment rate should be factored in.

Poland's economic development is differentiated regionally, as evidenced by the V_s , R and D coefficients of variation. The 2020 coefficient of variation calculated for gross domestic product (GDP *per capita*) for the 16 voivodships was $V_s = 25.0\%$. In 2020, GDP *per capita* in Poland amounted to over 61 thousand PLN, gross primary income (GPI) - over 40 thousand PLN, and disposable income - over 38 thousand PLN. The gross value added, in turn, totaled over 141 thousand PLN per 1 working person in Poland (Table 2). It should also be noted that Covid-19 ended almost three decades of uninterrupted economic growth. In Poland, severe reduction in economic activity occurred in the second quarter of 2020, resulting in an 8.4% decrease in GDP, compared to the same quarter in the previous year. The biggest negative contributor to the reduction in GDP growth was the strongly declining consumer demand, the decline of which was driven by households' adjustments to new, (i.e., difficult) circumstances (Nazarczuk, Cicha-Nazarczuk, Szczepańska, 2022).

The coefficients of variation calculated for the other economic indicators - GVA, NGPI and NGDI - also exceeded $V_s > 10\%$, which indicates significant variation among the voivodeships under study. The highest level of economic development in Poland, assessed based on GDP *per capita*, is invariably observed in the Mazowieckie Voivodeship (over 97 thousand PLN *per capita*), whereas the lowest - in the Lubelskie and Podkarpackie Voivodeships (42 thousand PLN) (Figure 1). The greatest distance between the Mazowieckie Voivodeship, on one side, and the Lubelskie and Podkarpackie Voivodeships, on the other, is also observed in nominal primary and gross disposable income as well as in the formation of gross value added per 1 worker (Table 2).

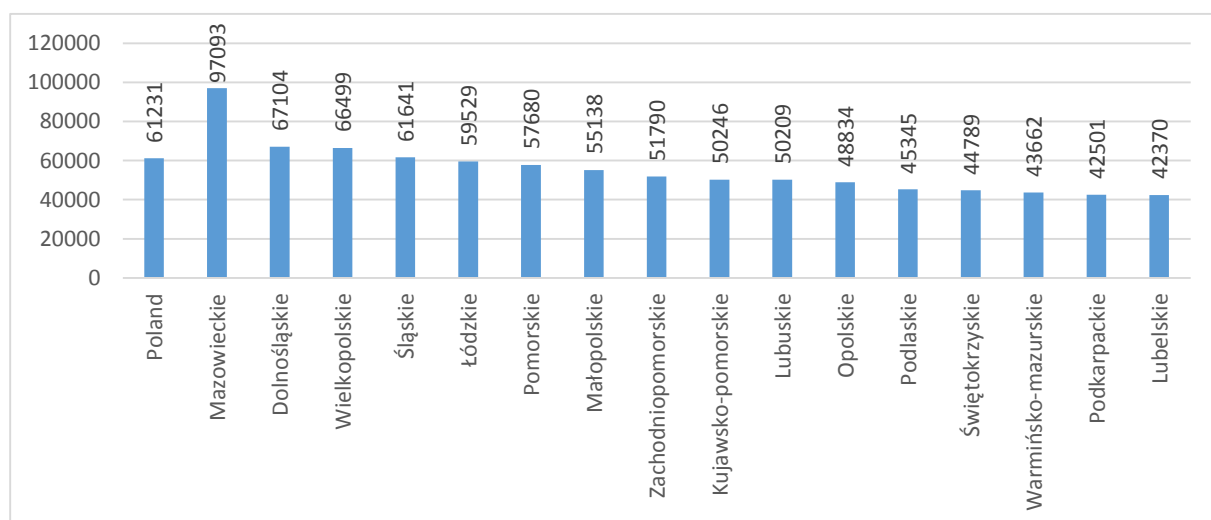


Figure 1. Voivodeship ranking by GDP *per capita* in 2020 – Poland.

Source: own calculation based on (GUS, 2023b).

Another indicator reflecting the economic development of regions is the unemployment rate. Economic crises intensify unfavorable economic circumstances, including unemployment and poverty, which in turn reduce, after a certain period of time, the consumption capacity of economic agents. Unemployment among household members directly translates into their

income situation, which is reflected in consumer spending, consumption and, as a result, in the standard of living. Absence of unemployment among household members markedly improves the agent's foothold on the market. The rate of employment determines the extent of the earned income underpinning the welfare of the employed (Berbeka, 2006).

Poland ranks among the countries with the lowest unemployment in Europe (EC EUROPA, 2023). Lower than in Poland unemployment is only observed in the Czech Republic (2.6% in 2020, and merely 2.2% in 2022). According to Eurostat, Poland's unemployment rate was 3.3% in 2020, 3.4% in 2021, and only 2.9% in 2022. According to the Central Statistical Office data taken into account in this article, the 2021 registered unemployment rate (RUR) was 5.8%. Considering the relatively low percentage values, the indicator featured is characterized by a distinctively high coefficient of variation $V_s = 30.7\%$. The highest rate of registered unemployment is observed in the Podkarpackie Voivodeship (9.9%), and is three times higher than in the Mazowieckie Voivodeship (3.2%) (Table 2).

Table 2.

Basic statistics of the economic indicators characterizing Poland's economic and income disparities at NUTS 2 level

| Specification | Poland (GUS data)* | \bar{x} NUTS2 | Min | Max | V_s | R | D | S | K |
|---------------|--------------------|-----------------|----------------------------------|--------------------------|-------|---------|-----|-----|------|
| GDP | 61231 | 55277 | 42370 (Lubelskie) | 97093 (Mazowieckie) | 25.0 | 54723 | 2.3 | 2.0 | 5.1 |
| GVA | 141948 | 133292 | 109275 (Lubelskie) | 181370 (Mazowieckie) | 13.3 | 72095 | 1.7 | 1.3 | 2.7 |
| NGPI | 40190 | 37740 | 30510 (Podkarpackie) | 53573 (Mazowieckie) | 14.9 | 23063 | 1.8 | 1.5 | 3.1 |
| NGDI | 38473 | 36525 | 30227 (Podkarpackie) | 48367 (Mazowieckie) | 12.3 | 18140 | 1.6 | 1.2 | 2.0 |
| RUR | 5.8 | 6.5 | 3.2 (Wielkopolskie) | 9.9 (Podkarpackie) | 30.7 | 6.7 | 3.1 | 0.1 | -1.2 |
| AMGE | 5682.97 | 5346.90 | 4884.89 (Warmińsko-Mazurskie) | 6735.13 (Mazowieckie) | 8.8 | 1850.24 | 1.4 | 1.9 | 4.2 |
| AMGP | 2623.26 | 2469.96 | 2269.05 (Podkarpackie) | 3044.95 (Śląskie) | 7.7 | 775.90 | 1.3 | 2.0 | 5.1 |
| AMAI | 2061.93 | 2000.87 | 1690.86 (Opolskie) | 2450.37 (Mazowieckie) | 9.7 | 759.51 | 1.4 | 0.4 | 0.7 |
| AMDI | 2014.61 | 1954.11 | 1628.18 (Opolskie) | 2394.84 (Mazowieckie) | 9.8 | 766.66 | 1.5 | 0.4 | 0.7 |

Notes: descriptions of abbreviations are provided in Table 1, V_s – coefficient of variation in %, min – minimum value, max – maximum value, R – spread in PLN or %, D – distance between objects [-], S – skewness [-], K – kurtosis [-].

* GUS [PL: Główny Urząd Statystyczny] – Central Statistical Office.

Source: own calculation based on (GUS, 2023a).

Alongside the indicators characterizing economic development, indicators of income also play a significant role, as they determine the proper level of consumers' and households' satisfaction of needs, as well as specify the relevant level and quality of regional residents' lives. Four indicators measuring the level of consumer income are covered in the present article:

average monthly gross earnings (AMGE), average monthly gross pensions and annuities in PLN (AMGP) as well as average monthly available (AMAI) and disposable (AMDI) household *per capita* income. According to the 2021 data, these indicators do not vary as much on a regional level, compared to those characterizing economic development, and do not exceed $V_s = 10\%$. Nonetheless, even insignificant differences in income can exert a considerable determining effect on consumption attitudes and behavior, or can be largely determinative of concerns and anxieties, caused by difficult circumstances, e.g., a crisis.

Statewide, the average monthly salary in 2021 was PLN 5346.90, with the highest in the Mazowieckie Voivodeship (PLN 6735.12) and the lowest in the Warmińsko-Mazurskie Voivodeship (PLN 4884.89). Poland's average monthly gross pensions and annuities, in turn, totaled PLN 2469.96 in 2021. The largest distance in this regard has been observed between the Śląskie Voivodeship - ranked first, with a pension level of PLN 3044.95 - and the Podkarpackie Voivodeship - ranked last, with a pension level of merely PLN 2269.05. The 2021 average monthly available and disposable household income *per capita* amounted to PLN 2061.93 and 2014.93, respectively, with the highest in the Mazowieckie Voivodeship invariably (2.4 thousand PLN), and the lowest in the Opolskie Voivodeship (1.6 thousand PLN) (Table 2).

Clear differences across all Polish voivodeships, as well as similarities within specific groups of voivodeships, both illustrated in Figure 2, can be observed with regard to the economic conditions analyzed. The diagrams show agglomerations/clusters/groups of voivodeships with similar levels of economic development (tree diagram 1) and similar levels of income determinants (tree diagram 2). The clustering was defined by Ward's method, with the use of the Euclidean distance metric. The grouping of voivodeships into clusters was performed halfway through the first and second ties. Tree diagrams 1 and 2 show four groups of voivodeships. With respect to economic development, clusters comprising the following voivodeships were formed:

- Cluster 1: Mazowieckie Voivodeship (outlier to the other voivodeships - very high level of economic development);
- Cluster 2: Dolnośląskie, Łódzkie, Pomorskie, Zachodniopomorskie, Śląskie and Wielkopolskie Voivodeships (6 voivodeships - high level of economic development);
- Cluster 3: Kujawsko-Pomorskie, Lubuskie, Opolskie, Małopolskie and Warmińsko-Mazurskie Voivodeships (medium level of economic development);
- Cluster 4: Lubelskie, Podkarpackie, Podlaskie and Świętokrzyskie Voivodeships (low level of economic development).

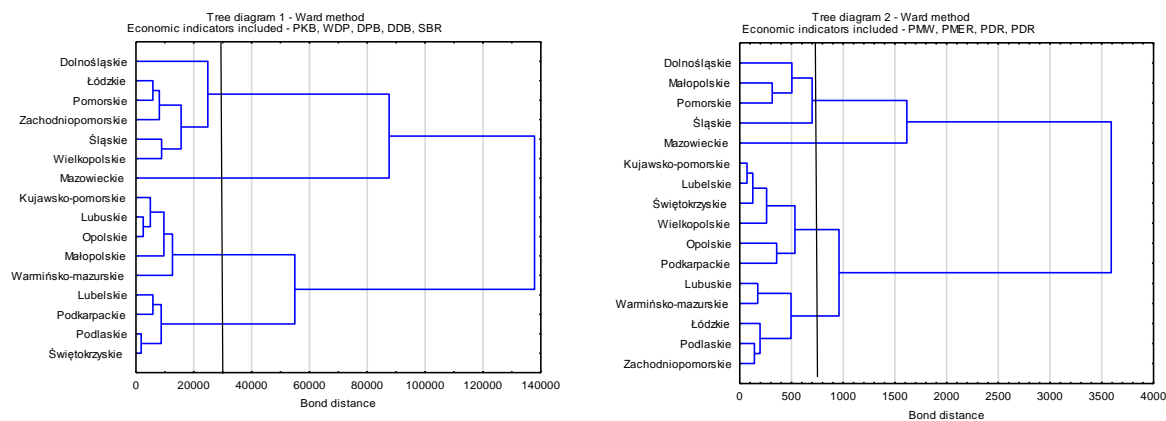


Figure 2. Clustering/agglomeration of Poland's voivodeships using Ward's method - analysis of the economic indicators characterizing the economic (tree diagram 1) and income situation (tree diagram 2).

Source: own calculation based on (GUS, 2023a).

Tree diagram 2, by contrast, which reflects income indicators, produced clusters of the following voivodeships:

- Cluster 1: Mazowieckie (outlier voivodeship - very high level of income);
- Cluster 2: Dolnośląskie, Małopolskie, Pomorskie and Śląskie Voivodeships (high levels of income);
- Cluster 3: Kujawsko-Pomorskie, Lubelskie, Świętokrzyskie, Wielkopolskie, Opolskie and Podkarpackie Voivodeships (medium levels of income);
- Cluster 4: Lubuskie, Warmińsko-Mazurskie, Łódzkie, Podlaskie and Zachodniopomorskie Voivodeships (low levels of income).

The Mazowieckie Voivodeship is noticeably distinct from the remaining regions and does not merge with any other voivodeships. Both the level of economic development as well as the level of residents' income are much higher in this voivodeship, compared to the remaining provinces (Figure 2).

Studies by other authors also confirm the significant disparities in regional development, which pose as one of the more acute problems faced by modern economies (Spychała, Spychała, 2022). These authors note that development disparities are not a new phenomenon, and economic disparities in regional development have been a persistent trend for many years. The development disproportions across regions in Poland are quite high. The literature typically refers to a division into the thriving Western Poland and the developmentally backward Eastern Poland (Miszczak, 2013; Wójtowicz, 2016). Better-developing voivodships have for years been those located in western and central Poland (Mazowieckie, Wielkopolskie), while less-developing are still those located in eastern Poland (Lubelskie, Podlaskie, Warmińsko-Mazurskie) (Malina, 2020). There are still regions in Poland which should be assisted in equaling their residents' prospects for a better life (Wyszkowska, Serwatka-Bober, 2018). The regions of central, southern and western Poland (i.e., Mazowieckie, Śląskie, Dolnośląskie and Wielkopolskie) are dominant, whereas eastern Poland regions (i.e., Lubelskie, Podkarpackie, Podlaskie and Warmińsko-Mazurskie) are at the opposite pole. The development

outlook does not prompt conclusions indicating any reprofiling of the development trends in the near future (Dębowski, 2013).

The economic indicators factored into the analyses of economic development and population income levels correlate significantly. All of these indicators, except the unemployment rate (RUR), are stimulants, i.e., higher values thereof intensify economic development and increase the level of needs satisfaction. The correlation relationship between the two is positive and, depending on the value of r_{xy} , medium/moderate, strong or very strong (practically functional relationship). The only negative correlation relationship is observable between the unemployment rate (RUR) and the other indicators, as this indicator acts as a destimulant, i.e., the higher the unemployment rate, the lower the economic development in these regions (Table 3).

Table 3.

Correlations between economic determinants in Poland at NUTS2 level

| Variable | r_{xy} coefficients of correlation between economic indicators - data for objects at NUTS 2 level | | | | | | | | |
|----------|---|--------|--------|--------|--------|--------|--------|-------|-------|
| | GDP | GVA | NGPI | NGDI | RUR | AMGE | AMGP | AMAI | AMD |
| GDP | 1.00 | 0.94* | 0.98* | 0.95* | -0.70* | 0.91* | 0.58* | 0.70* | 0.69* |
| GVA | 0.94* | 1.00 | 0.94* | 0.93* | -0.69* | 0.87* | 0.66* | 0.71* | 0.69* |
| NGPI | 0.98* | 0.94* | 1.00 | 0.98* | -0.73* | 0.90* | 0.65* | 0.72* | 0.71* |
| NGDI | 0.95* | 0.93* | 0.98* | 1.00 | -0.72* | 0.86* | 0.74* | 0.72* | 0.71* |
| RUR | -0.70* | -0.69* | -0.73* | -0.72* | 1.00 | -0.60* | -0.68* | -0.44 | -0.44 |
| AMGE | 0.91* | 0.87* | 0.90* | 0.86* | -0.60* | 1.00 | 0.62* | 0.69* | 0.68* |
| AMGP | 0.58* | 0.66* | 0.65* | 0.74* | -0.68* | 0.62* | 1.00 | 0.48 | 0.47 |
| AMAI | 0.70* | 0.71* | 0.72* | 0.72* | -0.44 | 0.69* | 0.48 | 1.00 | 1.00* |
| AMD | 0.69* | 0.69* | 0.71* | 0.71* | -0.44 | 0.68* | 0.47 | 1.00* | 1.00 |

Descriptions of abbreviations: GDP, GVA, NGPI, NGDI, RUR, AMGE, AMGP, AMAI, AMD are provided in Table 1.

* Marked correlation coefficients are significant at $p < 0.05$, $N = 16$ (Missing data were removed by cases).

Source: own calculation based on (GUS, 2023a).

As mentioned earlier in the methodological section, in order to elicit consumer opinions on crisis-related behavior and concerns, a survey was conducted among a group of 1000 respondents residing in Poland. The survey of the respondents' opinions was carried out in all 16 voivodships of Poland, which allowed regional analysis of the data obtained.

Similarly to the previously analyzed economic indicators, the respondents' crisis-related attitudes are differentiated regionally. A relatively high percentage of the respondents express concerns over their future family financial situation (60.1%) as well as their own and their families' security (60.0%) during the ongoing crisis. One in two respondents (50.7%) feel that once a crisis kicks in, nothing can be planned. The above concerns were expressed least often in the Lubuskie, Pomorskie and Zachodniopomorskie Voivodeships, and most often in the Warmińsko-Mazurskie and Kujawsko-Pomorskie Voivodeships. A much smaller percentage of respondents expressed concerns regarding their employment. The reasons for this can be attributed to the lowest in decades unemployment in Poland. In fact, 44.6% of the respondents expressed the opinion that they have become more respectful of the jobs they have during the current crisis, less than 34.3% are worried that their employment conditions will worsen and/or

their earnings will decline, 25.2% of the total number of respondents worry that they will lose their jobs and livelihood, while 23.0% have become more active in seeking new employment. The scale of responses varies from province to province in this case, but the least concern over losing employment is expressed by residents of the Mazowieckie Voivodeship, while the residents of the Podlasie region have become more active in seeking new employment.

The respondents who confirmed their crisis-related fears and concerns were additionally inquired whether they worry about security, income or employment as frequently, less frequently or more frequently as before the crisis. It turned out that every second respondent who confirmed such concerns have become even more worried about their families' future financial situation (47.5%) and security (49.7%) than before the crisis, while almost 40% of the respondents expressed the opinion that they more frequently than prior to the crisis feel that nothing can be planned. The respondents were much less likely to report that they had begun to worry more about losing employment. The largest percentage of the respondents whose negative feelings were further exacerbated by the crisis reside in the Warmińsko-Mazurskie and Kujawsko-Pomorskie Voivodeships, while the smallest percentage reside in the Northwestern Poland, i.e., the Zachodniopomorskie, Pomorskie and Lubuskie Voivodeships (Table 4).

Table 4.

Consumer crisis-related perceptions and concerns – V_s variation at NUTS 2 level in Poland

| Specification | Poland | min | max | V_s |
|---|--------|----------------------------|----------------------------|-------|
| Percentage of respondents confirming crisis-related perceptions and concerns | | | | |
| I am worried about losing my job/source of income | 25.2 | 14.8 (Mazowieckie) | 34.4 (Łódzkie) | 22.2 |
| I respect more the job I have | 44.6 | 26.9 (Opolskie) | 56.5 (Wielkopolskie) | 16.4 |
| I feel that nothing can be planned | 50.7 | 38.5 (Lubuskie) | 76.3 (Warmińsko-Mazurskie) | 16.4 |
| I worry about the future financial situation of my family | 60.1 | 50.8 (Pomorskie) | 73.6 (Kujawsko-Pomorskie) | 10.5 |
| I worry about my and my family's security | 60 | 51.1 (Zachodniopomorskie) | 69.8 (Kujawsko-Pomorskie) | 9.5 |
| I am worried that my employment conditions will deteriorate/I will earn less | 34.3 | 23.1 (Lubuskie) | 44.2 (Dolnośląskie) | 17.5 |
| I have become more active and begun looking for a new job/new sources of income | 23.0 | 12.5 (Świętokrzyskie) | 33.3 (Podlaskie) | 26.0 |
| Percentage of respondents confirming that their crisis-related perceptions and concerns have intensified, compared to pre-crisis levels | | | | |
| I am worried about losing my job/source of income | 19.9 | 11.3 (Mazowieckie) | 30.2 (Kujawsko-Pomorskie) | 26.1 |
| I respect more the job I have | 15.0 | 6.6 (Pomorskie) | 21.9 (Łódzkie) | 32.2 |
| I feel that nothing can be planned | 39.3 | 26.7 (Zachodniopomorskie.) | 65.8 (Warmińsko-Mazurskie) | 21.7 |
| I worry about the future financial situation of my family | 47.5 | 40.0 (Zachodniopomorskie) | 63.2 (Warmińsko-Mazurskie) | 12.7 |
| I worry about my and my family's security | 49.7 | 42.2 (Zachodniopomorskie) | 62.3 (Kujawsko-Pomorskie) | 12.6 |
| I am worried that my employment conditions will deteriorate/I will earn less | 28.4 | 15.4 (Lubuskie) | 36.4 (Dolnośląskie) | 21.4 |
| I have become more active and begun looking for a new job/new sources of income | 16.4 | 7.1 (Podkarpackie) | 30.0 (Podlaskie) | 34.4 |

Source: own study and elaboration.

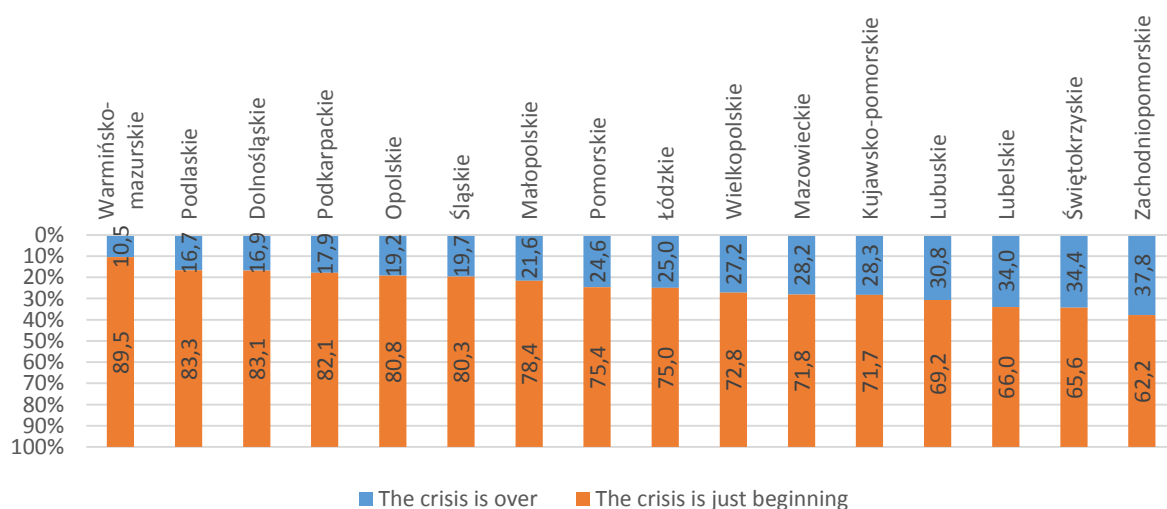
The vast majority of Polish residents are pessimistic about the course of the crisis. As many as 88.4% of the respondents believe that prices will continue to rise, 75.6% - that the crisis has only just begun, 69.5% - that the crisis is more dangerous than people think, 68.3% - that it will continue to worsen, and 51.5% - that it is better not to postpone major spending until the crisis is over. The smallest percentage of pessimistic statements expressed by the surveyed residents was recorded in the Zachodniopomorskie Voivodeship, whereas the biggest pessimists, as regards the crisis, are residents of the Warmińsko-Mazurskie and Podlaskie Voivodeships. Interestingly, compared to other regions, the residents of the Lubelskie and Świętokrzyskie Voivodeships show relatively the greatest optimism as to the ongoing crisis, despite the unfavorable economic and income indicators. Every third person residing in this voivodeship, and only every tenth person in the Warmińsko-Mazurskie Voivodeship, expressed the opinion that “the crisis is already over” (Table 5 and Figure 3).

Table 5.

Pessimistic crisis-related consumer statements – V_s variation at NUTS 2 level in Poland

| Specification | Poland | min | max | V_s |
|--|--------|---------------------------|----------------------------|-------|
| Crisis-related pessimistic statements | | | | |
| The crisis is only just beginning | 75.6 | 62.2 (Zachodniopomorskie) | 89.5 (Warmińsko-Mazurskie) | 10.0 |
| It will get progressively worse | 68.3 | 50.0 (Świętokrzyskie) | 81.6 (Warmińsko-Mazurskie) | 12.5 |
| It is better not to postpone major spending until the crisis is over | 51.5 | 37.5 (Podkarpackie) | 66.7 (Podlaskie) | 17.5 |
| Prices will continue to rise | 88.4 | 73.3 (Zachodniopomorskie) | 96.4 (Podkarpackie) | 6.8 |
| The crisis is more threatening than people think | 69.5 | 57.8 (Zachodniopomorskie) | 81.6 (Warmińsko-Mazurskie) | 9.9 |

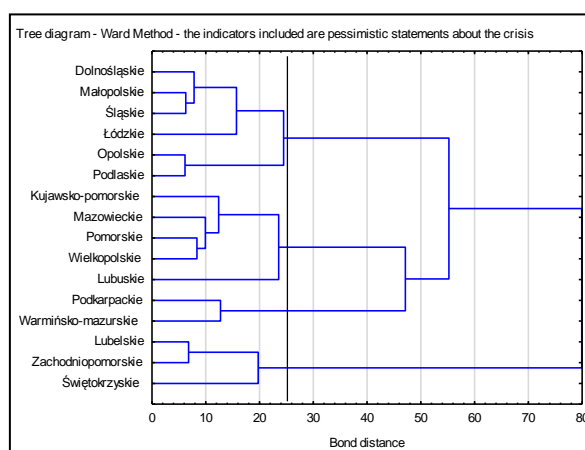
Source: own study and elaboration.

**Figure 3.** Ranking of Poland's voivodeships by subjective assessment of the crisis duration.

Source: own study and elaboration.

Taking the respondents' crisis-related pessimistic opinions into account (5 variables—see Table 5), four groups of voivodeships most similar in this regard were formed using the Ward's method:

- Cluster 1: Dolnośląskie, Małopolskie, Śląskie, Łódzkie, Opolskie and Podlaskie Voivodeships;
- Cluster 2: Kujawsko-Pomorskie, Mazowieckie, Pomorskie, Wielkopolskie and Lubuskie Voivodeships;
- Cluster 3: Podkarpackie and Warmińsko-Mazurskie Voivodeships;
- Cluster 4: Lubelskie, Zachodniopomorskie and Świętokrzyskie (Figure 4).



* the clustering of voivodeships were performed halfway through the first and second ties.

Figure 4. Clustering/agglomeration of Poland's voivodeships using Ward's method – analysis of crisis-related pessimistic statements.

Source: own study and elaboration.

The survey showed that 16.3% of the respondents reported a “strongly deteriorated” household income situation, compared to the pre-2020 period, and 39.5% responded that it has “rather deteriorated”. Only 8.9% of the surveyed feel that their income situation will “strongly deteriorate” and as many as 32.9% believe that it will “rather deteriorate” in the next two years. Similarly to the previous answers, the largest number of the respondents declaring “strong deterioration” of the economic situation, both in the past as well as in a two-year perspective (34.2% and 26.3%, respectively), reside in the Warmińsko-Mazurskie Voivodeship. In contrast, the least severe deterioration of the financial situation was declared by residents of the Świętokrzyskie Voivodeship (6.3%), while the greatest optimists in this regard are the residents of the Podlaskie Voivodeship, where only 3.3% of the total number of the surveyed declared strong deterioration of their material situation in the perspective of the upcoming two years (Table 6).

Table 6.*Consumer crisis-related perceptions and concerns – V_s variation at NUTS 2 level in Poland*

| Specification | Poland | min | max | V _s |
|--|--------|----------------------|----------------------------|----------------|
| Please assess your household's economic/income situation relative to before 2020 | | | | |
| it has deteriorated strongly | 16.3 | 6.3 (Świętokrzyskie) | 34.2 (Warmińsko-Mazurskie) | 38.9 |
| it has rather deteriorated | 39.5 | 23.1 (Lubuskie) | 53.8 (Opolskie) | 20.9 |
| Please assess whether your household's economic/income situation will change over the next two years | | | | |
| it will strongly deteriorate | 8.9 | 3.3 (Podlaskie) | 26.3 (Warmińsko-Mazurskie) | 59.5 |
| it will rather deteriorate | 32.9 | 15.1 (Lubuskie) | 44.6 (Podkarpackie) | 27.2 |

Source: own study and elaboration.

The crisis has prompted as many as 56.1% of the surveyed residents of Poland to reduce the level of personal consumption, 49.5% to reduce the level of household needs satisfaction, as many as 64.3% to alter their shopping habits, while 72.4% of the total number of respondents declared that their consumption behavior has become more rational. Relatively least frequently, the above opinions were expressed by the residents of the Lubuskie Voivodeship, and again most frequently by the residents of the Warmińsko-Mazurskie and Podlaskie Voivodeships (Table 7).

Table 7.*Percentage of consumers reporting reduced and altered behavior relative to pre-crisis (pre-2020) - regional differences at NUTS 2 level*

| Specification | Poland | min | max | V _s |
|--|--|----------------------------|----------------------------|----------------|
| | Sum of "definitely yes" and "rather yes" indications | | | |
| Reduction in the level of personal consumption | 56.1 | 37.7 (Lubelskie, Lubuskie) | 81.6 (Warmińsko-Mazurskie) | 18.0 |
| Reduction in the level of household needs satisfaction | 49.5 | 30.8 (Lubuskie) | 58.1 (Śląskie) | 12.9 |
| Altered shopping habits | 64.3 | 42.3 (Lubuskie) | 81.6 (Warmińsko-Mazurskie) | 14.6 |
| Rationalization of consumption behavior | 72.4 | 53.8 (Lubuskie) | 90.0 (Podlaskie) | 11.7 |

Source: own study and elaboration.

The primary objective throughout the article was to verify whether the economic development and residents' incomes in the various voivodeships of Poland affect the consumers' concern, attitudes and behavior during the current crisis. Detailed analyses of the correlations were performed with respect to all variables covered by the study. The article, however, discusses only those variables which display visible correlation. Since the relationships between the economic indicators taken into account during the survey, and presented in Table 3, show strong correlational linkages, selected variables were included in the further analysis of their impact on consumer concerns and behavior: GDP *per capita* (GDP), registered unemployment rate (RUR), average monthly earnings (AMGE), average monthly pensions and annuities (AMGP) and average monthly available income (AMAI).

The analysis of the correlation coefficients presented in Table 8 yielded specific insights. The impact of the regional variation in selected economic indicators on regional differences in the expressed crisis-related consumer concerns can thereby be confirmed. Although correlations do occur, however, they are not sufficiently strong to conclusively confirm the significance of this impact.

Table 8.

Correlations between selected economic indicators and crisis-related consumer concerns - regional analysis at NUTS2 level

| Variable | r_{xy} correlations | | | | | | | |
|---|-----------------------|--------|--------|--------|---|--------|--------|--------|
| | GDP | RUR | AMGE | AMAI | GDP | RUR | AMGE | AMAI |
| | confirmed concerns | | | | declaration that concerns are more prevalent than before the crisis | | | |
| I am worried about losing my job/source of income | -0.36* | 0.10 | -0.35* | -0.02 | -0.39* | 0.25* | -0.29* | -0.22* |
| I respect more the job I have | 0.16 | 0.05 | 0.00 | 0.19 | 0.24* | -0.18 | 0.18 | 0.29* |
| I feel that nothing can be planned | -0.26* | 0.27* | -0.26* | -0.07 | -0.32* | 0.41* | -0.28* | -0.17 |
| I worry about the future financial situation of my family | -0.12 | 0.42** | -0.17 | 0.21 | -0.10 | 0.55** | -0.07 | 0.09 |
| I worry about my and my family's security | -0.45* | 0.34* | -0.46* | -0.37* | -0.42* | 0.44* | -0.29 | -0.16 |
| I am worried that my employment conditions will deteriorate/I will earn less | 0.09 | 0.00 | 0.09 | 0.25 | 0.06 | 0.09 | 0.09 | 0.20* |
| I have become more active and begun looking for a new job/new sources of income | 0.34* | -0.20* | 0.32* | 0.26* | 0.06 | -0.05 | 0.08 | 0.23* |

Descriptions of abbreviations: GDP, RUR, AMGE, AMAI are provided in Table 1.

* weak positive or negative correlation.

** moderate positive or negative correlation, significant at $p < 0.05$; $N = 16$.

Source: own study and elaboration.

Consistent with the interpretation of the significance of Pearson's linear correlation coefficient r_{xy} , presented in the literature (Wysocki, Lira, 2005), generally, a weak or moderate negative or positive relationship was observed between the variables under study. Accordingly, it can be concluded that:

- the percentage of respondents declaring concerns over losing their employment and livelihood, with feelings that nothing can be planned, including worries about their own and their families' security, increases in voivodeships characterized by a decline in economic development and average monthly earnings;
- residents of voivodeships with high unemployment significantly more frequently than prior to the crisis worry about losing employment and livelihood, feel that nothing can be planned and, more importantly, significantly more often worry about their families' future financial situation ($r_{xy} = 0.55$) and security;
- in voivodeships characterized by higher economic development, higher average monthly earnings and available income, as well as lower unemployment rates, relatively more respondents declare to be more active in seeking new employment and sources of income (Table 8).

The study of the correlations between the variables under examination yielded interesting results regarding the impact on consumer concerns and behavior, especially with regard to the varying amount of average monthly pensions and annuities. Indeed, a significant negative relationship exists between the amount of pensions and annuities and the respondent's concerns about their own and their families' security ($r_{xy} = -0.52$). The results of the survey have evidenced that the higher the pensions and annuities in the region, the lower the percentage of respondents declaring concerns about their own and their families' security. Interestingly, the analyses also proved a significant positive correlation between the amount of pensions and the scale of opinions indicating a reduction in the level of household needs satisfaction ($r_{xy} = 0.52$). It turns out that, as pensions and annuities increase, the percentage of respondents declaring a reduction in the level of household needs satisfaction increases. In the voivodeships where pensions are the lowest (Podkarpackie, Lubelskie, Świętokrzyskie, Lubuskie), the percentage of consumers declaring a reduction in the level of household needs satisfaction was equally low. In the Śląskie Voivodeship, where pensions and annuities are the highest, the percentage of respondents declaring a reduction in the level of household needs satisfaction was the highest (Figure 5).

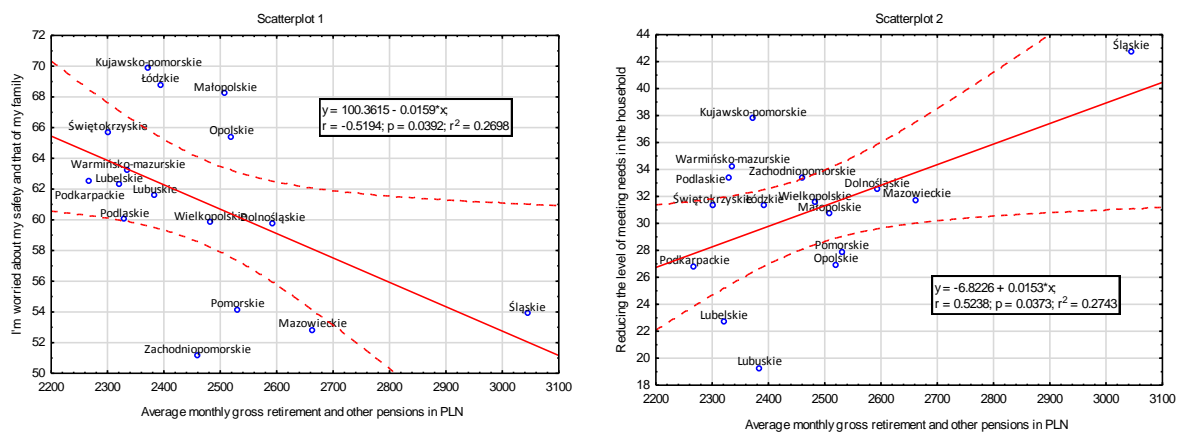


Figure 5. Correlations between average monthly gross pensions and annuities (in PLN) and consumers' concerns about their own and their families' security (Scatterplot 1) as well as their declaration of a reduction in the level of household needs satisfaction, relative to before the crisis (Scatterplot 2).

Source: own study and elaboration.

Changes in consumer sentiment and behavior induced by the crisis have also been confirmed by the results of other authors' studies. The crisis triggered by the Covid-19 pandemic caused changes in consumers' purchasing behavior, particularly in the purchase volume of certain product categories, as well as in terms of places where purchases are made and the attitudes towards consumption (Chlipała, Żbikowska, 2021). The COVID-19 pandemic has significantly affected the financial situation of many households, altering consumers' previous occupational, social and family life. The widespread uncertainty as to further economic shifts not only has had a devastating effect on household consumption decisions, including changes in household patterns (Solarz, Waliszewski, 2021), but has also threatened the population's work life. As reported by the Center for Economic Analysis, the number of Poland's residents

at risk of losing employment or suffering a drop in income was 780 000 (Czech et al., 2020). The average earnings dropped by PLN 371 as early as the first months of 2020 (Szukalski, 2020). What is more, as a result of losing employment or being forced to close businesses, some households fell into the group threatened by poverty (Kalinowski, Wyduba, 2020). It should also be noted that the crisis evoked a sense of high uncertainty among the public, and consequently, a more prudent approach to spending emerged as a natural reaction. It should also be noted that the crisis induced a sense of high uncertainty among consumers, which in consequence has naturally resulted in a more prudent approach to their management of financial resources. The fundamental reasons underlying the rationalization of behavior were the deteriorating economic situation and the increased risk of unemployment, as well as, in part, the aftermath of the implemented restrictions on mobility (Nazarczuk, Cicha-Nazarczuk, Szczepańska, 2022).

5. Conclusions

Summing up the results of the survey, it should be concluded that the economic crisis triggered by the Covid-19 pandemic in 2020, followed by the outbreak of the war in Ukraine and the consequent cycle of escalating adverse economic phenomena, have prompted changes in consumer attitudes and behavior. Concerns over loss of employment and livelihood have intensified among consumers, who have become relatively more concerned about maintaining their current income and level of needs satisfaction during the crisis. The sense of security, as well as sustenance of the future financial standing at an appropriate level, have proven to be of great importance to households. The crisis has forced consumers to reduce the level of personal and household consumption far more commonly, and shifted their purchasing habits and consumption to a more rational level.

Consumers make their decisions amid various conditions, and economic factors play the biggest role in this regard. Poland is still significantly differentiated regionally in terms of the economic level of voivodeships, including the incomes of the resident households and consumers, and the current crisis is not conducive to the reduction of these disparities. Particularly significant disparities exist between the relatively poorest voivodeships of eastern and southeastern Poland and the richer regions of northern and northwestern Poland. The pessimistic attitudes toward the crisis, as well as the associated elevated fears and concerns, are not uniform among all consumers. Regional variation is clearly evident in Poland in this regard. It turns out that the decline in economic development, the drop in consumers' monthly earnings and incomes, as well as the rise in unemployment in these voivodeships, have led to an increase in the percentage of respondents expressing fears of losing employment and livelihood as well as declaring feelings that nothing can be planned and concerns about their

own and their families' security. Crisis-related concerns, anxieties and limitations are relatively more often exhibited by residents of poorer voivodeships (Warmińsko-Mazurskie, Kujawsko-Pomorskie), compared to richer regions (Mazowieckie, Pomorskie). The survey revealed that residents of voivodeships with relatively lower pensions and annuities are significantly more prone to anxiety over their sense of security, yet, interestingly, are less likely to declare reduced satisfaction of household needs.

In a period of economic crisis, given its significant contribution to pessimistic consumer sentiment, including consumer behavior leading to a decline in demand and a reduction in the level of needs satisfaction, the role of the state and its strength becomes of great significance. This role first and foremost entails remediation of market inefficiencies and leveling of market imperfections. The primary state efforts to prevent the negative effects of a crisis are focused on the provision of assistance to entities affected by the crisis. The state can also stabilize economic activity by adopting appropriate corrective measures or leveling the negative impact of the crisis on consumer attitudes and behavior. It can employ a wide list of administrative, economic, social and financial instruments. These instruments yield indirect effects; nevertheless, they allow the authorities to create certain conditions preventing deterioration of consumer sentiment and averting reductions in consumption. The scope and availability of state-provided social services (e.g., health care, education, housing) are of particular significance under crisis conditions. A period of crisis often forces changes involving an increased share of social outlays in the divided national income. Regional policies, in turn, should primarily seek to reduce the inequality of regions in consumption opportunities and the level of needs satisfaction, in order to contain the process of marginalization and impoverishment among the inhabitants of the least developed regions.

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